Discourses on Modernity

Edited by V. P. J. Arponen, Artur Ribeiro, Konrad Ott

Social, Environmental, and Cultural Connectivity in Past Societies

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Foreword of the Series Editors

As the outcome of overarching, interdisciplinary scientific research efforts within the Excellence Cluster 'ROOTS – Social, Environmental and Cultural Connectivity in Past Societies' at Kiel University, we are pleased to present the ninth volume of the publication series **ROOTS Studies.** This book series of the Cluster of Excellence ROOTS addresses social, environmental and cultural phenomena as well as processes of past human development in light of the key concept of 'connectivity' and presents scientific research proceeding from the implementation of individual and cross-disciplinary projects. The results of specific research topics and themes across various formats, including monographs, edited volumes/proceedings and data collections, are the backbone of this book series. The published volumes serve as a mirror of the coordinated concern of ROOTS researchers and their partners, who explore the human-environmental relationship over a plurality of spatial and temporal scales within divergent scientific disciplines. The associated research challenges revolve around the premise that humans and environments have interwoven roots, which reciprocally influence each other, stemming from and yielding connectivities that can be identified and juxtaposed against current social issues and crises. The highly dynamic research agenda of the ROOTS Cluster, its diverse subclusters and state of the art research set the stage for particularly fascinating results.

This new book in the ROOTS Studies series is dedicated to the theoretical foundations of archaeological research today. What originally began as a workshop with the title "Philosophy of Archaeology" developed into an intensive ex-

amination of the question what actually constitutes the legacy of 'modernity' in contemporary archaeology. With Locke and Descartes, on the one hand, and Kant on the other, the two philosophical foundations of 'modernity' were established, but later became central problems in modern thought, problems that were also relevant to the development of modern archaeology: The dualism between mind and world: To what extent do our concepts and reconstructions of the world (*especially* past worlds) actually represent the reality of the (past) world? In addition to this fundamental ontological aspect (with the central issues of 'rationality' and 'methodology'), aspects such as 'individuality' and 'socio-political relations' also come into play here as a legacy of modernity. Particularly at a time when the natural sciences and their methods are attempting to abolish the still unresolved dualism between 'mind' and 'nature', the volume is a welcome plea for a prudently mediated preservation of the old legacy of modernity and an implicit warning against a one-sided 'scientification' of archaeology. In this sense, the project of modernity is also a constant challenge for archaeology, a 'project of hope', as the editors themselves call it. The authors approach the subject not only from different disciplinary perspectives, but in a truly interdisciplinary manner. Their suggestions will foster future discussions about the self-conceptions of archaeology.

The editors of the **ROOTS Studies** series would like to take the opportunity to thank those colleagues involved in the successful realisation of the ninth volume. We are very grateful for the detailed and well-directed work of the ROOTS publication team. Specifically, we thank Andrea Ricci for his steady support and coordination efforts during the publication process, Petra Horstmann for the preparation of the cover design and Eileen Küçükkaraca for scientific editing. Moreover, we are indebted to the anonymous peer reviewers and our partners at Sidestone Press, Karsten Wentink, Corné van Woerdekom and Eric van den Bandt, for their support and their commitment to this publication.

Kiel, February 2025
Eileen Eckmeier, Martin Furholt, Lutz Käppel, Johannes Müller

Contents

Foreword of the Series Editors 5

Preface of the Book Editors 9

Opening Words 11
V. P. J. Arponen, Artur Ribeiro, Konrad Ott

Towards Difference 25
Rachel J. Crellin

Archaeology and Metamodernity 31
Caroline Heitz

Analogical Reasoning and the New Materialism: Reactions to *Discourses on Modernity* 55
Jerimy J. Cunningham

Escaping Modernity with Modernity: Some Reactions to Reactions 69
V. P. J Arponen

Origins of the Anthropocene in the Neolithic: A Contribution to an Understanding of the Deep Roots of the Modern Condition 81
Konrad Ott

Author Information 99

Preface of the Book Editors

This small collection of contributions features texts from participants to the workshop titled *Philosophy of Archaeology*. The workshop took place in February 2020, only a few weeks before the onset of the global Covid pandemic. The workshop was organised by the book editors with the help of many involved people at Kiel University, Germany. Thus, we want to thank our staff and colleagues as well as all of the participants and the audience of our workshop for their support and interest.

Little did we know back then in February 2020 how the pandemic would disrupt our academic and personal lives. We are thankful to all involved that our small collection now sees the light of day.

As we were writing up our contributions for this volume in the depths of the pandemic, the idea was born that the collection would attempt to mime the nature of typical exchanges of comments, questions and answers following a conference paper in a face-to-face workshop. The reader will see that the articles printed below are self-contained pieces but also have the character of responses to the introductory "Opening Words" from the editors. From this, a set of "discourses on modernity" ensued. The topic of our original workshop was a broad one – nothing more, nothing less, than *philosophy of archaeology*. In the course of the workshop, we saw how the conversation time and again turned to concern the diverse impacts and influence of the broad and multi-faceted intellectual heritage of modernity on the practice of archaeology and related disciplines. Modernity thus became the topic of the discourses contained in this collection.

The workshop and the editing work for this volume was conducted in the framework of the Excellence Cluster 'ROOTS – Social, Environmental and Cultural Connectivity in Past Societies', with funding from the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2150-390870439.

Kiel, February 2025
V. P. J. Arponen, Artur Ribeiro, Konrad Ott

Opening Words

V. P. J. Arponen, Artur Ribeiro, Konrad Ott

The small book you are holding in your hand arose from contributions made to the workshop on philosophy of archaeology at Kiel University, Germany, in February 2020. It was an interdisciplinary gathering of archaeologists and philosophers on the broad topic of being philosophical about archaeology. What you will read in the pages below strongly reflects the interdisciplinary character of that encounter in that we constantly seek to relate the comparatively young but already diverse traditions of archaeological theory with considerably older and perhaps even more diverse traditions of philosophy.

What emerged over the two days of the workshop turned out to be something of an interrogation of a range of key theoretical ideas. However, it occurred to us that many of the topics discussed had a connection to the philosophical heritage of modernity. These discussions presupposed that there "is" such heritage and that its constitutive building blocks can be identified. In this book, we took the same conversational approach as in the workshop. In the texts below, we take turns to deliver a short discourse on a selected topic, hear others' reactions and rejoinders to the discourse, and so the ball rolls on and on. The result is, we believe, a captivating set of discourses from a multitude of interdisciplinary voices.

In these opening words, we will attempt a concise, if many-sided and certainly contestable, characterisation of modernity's different facets. What is modernity?

As Jonathan Israel has pointed out, there is no single modernity, but rather, multiple modernities that have clashed with each other over the centuries (Israel 2001). But nevertheless, there are common themes and topics. In general terms, modernity is an epochal shift from a period of "onto-theological" order (nature as divine creation, feudal order given by God's grace, sinful humanity, eternal judgement) towards one of secular order, secular reason, constitutional law, and the humanist concept of value and equality of humankind. At the same time, it is a period marked by the rise of methodological science, rationalism, universalisation of human nature, nation states, and secular bureaucracy (cf. Thomas 2004). It is, in other words, the formation of a "Baconian" fusion of empirical science, technology, and capitalist economies.

If we take the beginning of modern philosophy as our starting point of intellectual modernity, then we can locate two of modernity's key aspects in the British empiricism of David Hume and John Locke, on the one hand, and in the transcendental idealism of Immanuel Kant on the other. From Locke – the self-confessed "under-labourer" of the emerging natural sciences and scientists such as Boyle, Sydenham, Huygenius, and "the incomparable Mr. Newton", many of whom were Locke's personal friends, and for whom Locke described himself as merely "clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge" (Locke 1690) – there is a clear connection to a central defining feature of modern thought, namely, the emergence of modern natural sciences and the natural scientific method. Empiricism describes the theory of knowledge that underlies the natural scientific, "mechanical" worldview (Merchant 1980), goes back to Francis Bacon (1898), and receives a great systematisation in David Hume (2000 [1739-40]). There is the concept of experience as providing the foundational elements or data of knowledge in which various statistical, quantitative, and comparative methods can distinguish regularities, causes and effects.

There is also the concept of reductionism here, the idea that the workings of reality should be reducible to a limited number of principles concerning the elemental building blocks of the "real" and their relationships. At the same time, reductionism, however, remained contested in the biological as physicalism and vitalism clashed with each other in biology before and after Darwin (Mayr 1997).

Finally, empiricism and reductionism go conceptually hand in hand with a naturalistic ontology, the idea that reality is fundamentally a materialistic or physical totality. In modern and more so in contemporary philosophy (Vidal 2002), physicalism is associated with the kind of physical and materialist concept of the fundamental constitution of reality as studied in a number of modern natural sciences from the atom theory and beyond in physics, to molecular and other branches of biology, and so forth. Such sciences recognise a number of intrinsic properties and relations that in physicalism are taken to constitute fundamental reality. It is understood that the intrinsic properties and relations are, at the same time, subject to revision and further specification. In either case, this concept of a naturalist ontology stands in certain interesting relationships, for example, to the concept of ontology in the so-called "ontological turn" in anthropology and archaeology, of which more is discussed below.

Not only the natural sciences but also the "modern" humanities emerged as scientific disciplines in the 18th and the 19th centuries. History was not recognised as a scientific discipline in the pre-modern Aristotelian system of science, but took the lead among the humanities at the beginning of 19th century (Schnädelbach 1983, chap. 4; Ott 1991). With this, particularities of nations, people, periods,

languages, territories, *etc*. became objects of study. The field of historical disciplines (*Historische Geisteswissenschaften*) was established in the work of Ranke, Droysen, and Dilthey, and later, came to include ethnography and archaeology as well. At the end of the 19th century, the duality between the sciences and the humanities had been philosophically reflected (Windelband 1957 [1891]). Dualities were not seen as unbridgeable but allowed for mediation (*Vermittlung*). Quite early, the field of "pre-history" was seen as an interface between the sciences and the humanities (Droysen 1882) and archaeologists as "historical investigators of nature" (*historisierende Naturforscher*; Droysen 1882).[1] Thus, the important role of the natural sciences in archaeology has been recognised and endorsed since its origins. Therefore, archaic history and archaeology both emerge from the characteristically modern constellation of the sciences and the humanities (Ott 2023, part I). From this perspective, it does not come as a surprise that archaic history and archaeology are always on the shifting ground between science and the humanities. Such shifts come as "waves" in the history of the discipline. Such shifts, which always find proponents and opponents, belong to the modern way of doing science.

The effects of empiricism, reductionism, and naturalism in archaeology, anthropology and related disciplines, have been profound. Processual archaeology tends to work with an empiricist epistemology pertaining to methods and methodologies of scientific archaeology (Ribeiro 2019). Classically, processual archaeology displays the concept of a reductionist and naturalist ontology positing essential processes such as optimal foraging, social evolution and survival, the dependence of the human animal on the environment, and more – processes that are ultimately reducible to essential drivers of human action identified in evolutionary theory, biology, and beyond.

Alongside empiricism, as a second strand of formative influence of modernity, stands the transcendental idealism of Immanuel Kant. Notably, from Kant, also an Enlightenment thinker like Hume and Locke, there emerges a concept of a rigorous, scientific approach to human understanding, only it is of a rather different kind than empiricism. Kant conceived the object of transcendental philosophy to be the non-material scaffolding, structure, or logic of human reasoning. These were the categories of judgements that describe the invariable, transcendental form that human reasoning must take in its comprehension of the natural and moral world. In moral philosophy, Kant championed a parallel transcendental approach seeking to describe the universal moral principles. In the moral realm, the transcendentality of Kant's philosophical orientation becomes evident: a truly universal categorical imperative is valid for all reasonable agents. That principle deals with transcendental facts of universalisability, not with empirical, psychological, or other such contingencies (Garlitz 2021). For reasons talked about below, this transcendentality has often escaped Kant's readers' attention, seemingly escaping, for example, Bruno Latour who attacked Kant as a dualist (Latour 1994).[2] Kant's concept of pure theoretical and practical reason was, however, augmented by a pragmatic anthropology, and a theory of aesthetic judgement.

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1 Droysen mentioned palaeoclimatic research from an historical perspective: "Die Naturforschung hat hier darum ihren großen Anteil, weil die Reste von Knochen, Vegetabilien, Steinarten, die aus denselben sich ergebenden Schlüsse auf die tellurischen Bedingungen [...] nur aus der genauesten naturwissenschaftlichen Kenntnis zu erkennen und zu verwerten sind" (Droysen 1882, 39).

2 Consider, *e.g.,* this passage: "This Kantian formulation is still visible today every time the human mind is credited with the capacity to impose forms arbitrarily on amorphous but real matter." (Latour 1994, 56).

In this sense, in classic anthropology, such as in the work of Émile Durkheim, "social facts" (Durkheim 1895) were conceived in the Kantian tradition as having to do with the ways humans relate to each other (rather than, say, some fundamental biological drivers of why those relations come about). Durkheim's philosophy of social science was arguably Kantian in that this relationality of human relations is cast as transcendental, or at least not reducible to some naturalist or other reductivist essence – in this sense, transcendental relationality seems akin to relationality as described in some forms of posthumanism that seeks a concept of relational order that is not epistemic conventionalism but also not ontological naturalism (Crellin and Harris 2021).

The Kantian concept of categories of judgements, then, can be seen to underlie a wealth of human scientific thought in archaeology and elsewhere. Perhaps the most rigorous adherent to the Kantian concept of a transcendental logic was Claude Lévi-Strauss (1967 [1962]) who, parallel to Kant, posited a structure to the human epistemology that was universal, present in various cultures of the world in various ways, and mirrored in kinship as well as other practices. Over time, this stream of Kantian thought has found it difficult to maintain its original transcendental epistemology, in part under pressure from the concept of the naturalist ontology discussed above. Categories of understanding are nowadays most intuitively understood on a naturalist basis as cognitive but ultimately material structures of the human mind (Searle 1996; 2010). An evolutionary reading of Kantianism has been proposed by Engels (1989, chap. 9).

Now, emanating both from the Kantian idealist (or non-transcendental misreadings of it) as well as the Lockean empiricist traditions, there is the perhaps most discussed aspect of the heritage of modernity, namely, the concept of *dualism*. In Descartes' thought (Tweyman 1993), to which dualism is most often traced back to, this dualism is in the first line ontological: He posits two realms of existence, the mind and body, or the material and spiritual. However, the ultimate heritage of this dualism has been epistemological. With Descartes – and solidified in, both, idealism and empiricism – there opened up a chasm and a division between human knowledge expressed in human concepts and language and that which human knowledge is supposedly about, the world or reality.

Descartes' lasting impact in modern philosophy resides in the problem of scepticism which arises precisely from epistemological dualism: How can the knowing being ever really know that the concepts it entertains really do correspond or mirror reality (Rorty 1993 [1979]). This is the classic problem of knowledge that also archaeological theorists have wrestled with, namely, the open nature of whether our interpretative schemes really correspond to the past reality that they intend to understand, explain, and describe (Wylie 1989). In philosophies inspired by Martin Heidegger (1996 [1927]), this concept of contemplative knowledge was contrasted with the idea that humans also engage with the world through embodied know-how, not merely through know-that (Taylor 1994).

A second distinct but related effect of dualism discussed in anthropology and archaeology concerns individualism. In Descartes' concept, the human being emerged first and foremost as a thinking, contemplative being, and only secondarily as someone with a bodily or embodied, and a socio-cultural existence in the world. In philosophy, this putative radical solipsism of the individual minds came under critique among others in Wittgenstein's (2010 [1953]) later philosophy. In anthropology, the concept of "dividual" has been used to articulate the essential relational character of the individual as always belonging to, and only conceptu-

alisable through, some socio-cultural context or another – although, Karl Smith has pointed out that relationality has been under heavy criticism because it artificially separates modern western individuality and pre-modern relationality, as if relational personhood cannot be applied in modern western contexts (Smith 2012; Shweder and Bourne 1982; Strathern 1988). That said, from a social historical perspective, we can perhaps contrast individuality as determined in modernity by estrangement of urbanising masses from the rural roots in kin and ultimately through bureaucratic and military practices of recording individual names, birth dates, physical properties, and the like from social forms where the social context of such determinations are absent (Ariès 1962).

The transcendental tradition of analysis of pure reason was, from the start, also accompanied by approaches which pointed at the particular cultural ways to perceive and conceive a world. The Cartesian-Kantian line of reasoning was rejected by cultural philosophy in the 18th century and Cartesianism, in particular, was widely rejected as extremely dualistic (Berlin 2013). While Kant, indeed, remained at the layer of the general, "pure" philosophy, Herder (1800) proposed a theory of particular cultures, while the Romantic movement discovered the inner life of individuals. Wilhelm von Humboldt (1979 [1827-1829]) coined the concept of lingual world views. Daniel Friedrich Schleiermacher (2011/1977 [1834]) conceived the discipline called "hermeneutics" as the fine art of textual understanding. The individual was seen as being embedded in historical communities. Alexander von Humboldt outlined a theory of the planetary ecology ("*Kosmos*", Humboldt 1978 [1845-1862]). Language, culture, history, geography, communities, even scriptures were powers that shape each and any actual human life. These powers became objects of inquiry. The transcendental ("general") outlook on humans was augmented by historical studies about the many ways of human life. As Foucault (1997 [1970]) rightly pointed out, in modern science the study of the human being became a "double enterprise". It was either more transcendental as in Husserl's (2014 [1913]) pure phenomenology and Chomsky's generative grammar, or more empirical-historical as in many studies in cultural anthropology, archaeology, *etc*. Modern thought on the human being existed on a continuum from general anthropology (Gehlen 1940; Plessner 1975 [1928]) to particular empiricism, historism, and culturalism.

From such traditions of cultural theory, it became possible to conceive of political, social, and cultural shaping of knowledge (Kuhn 2009; Bloor 2002; Pickering 1995; Berger and Luckmann 1966). If modernity enabled the idea that human knowledge was always mediated by concepts, symbolic orders, paradigms, and by categories of thought, but held that there was a prospect of a reduction to, or otherwise the discovery of, a singular, universal, materialist ontological order, then post-modernity appears as retaining modern epistemological pluralism but rejects ontological singularity emphasising particularism, multi-vocality, and epistemic plurality instead of epistemic and ontological reductionism. In this regard, modernity can be said to have enabled the idea that one can take a step into post-modernity. One can, however, also put it the other way around: most postmodern ideas have been present in the discourses on the modern condition (Habermas 2004 [1985]).

In archaeology, the concept of relativism, the social construction of reality and its critique in feminism and elsewhere (Wylie 2002) have been central to post-processualism, as has the hermeneutic tradition (Hodder 1991; Patterson 1989, 556). Additionally, post-processualism also engendered the rise of agency theory, which in archaeology, lent a strong focus on the role of the individual in pre-modern

times and places. The struggle between "agency" and "structure" (Giddens 1979; 1984) is a typical modern antinomy: If humans have reasons for doing something and if choice and a set of capabilities must be supposed (transcendentally) then "agency" must become a focal interest in archaeology. If all agency is always situated, embedded, and constrained, there must be "structures" within which agency is performed. Thus, agency and structure presuppose each other, neither allowing for an either-or nor for a firm hierarchy.

As a third and final essential aspect of the heritage of modernity, we turn away from epistemology and ontology to socio-political relations. With the gradual emergence of natural sciences, and with that more and more powerful technological means of production, modernity can be understood as essentially earmarked by the rupture of feudal socio-economic relations (Wallerstein 2007; Wolf 2010; Marx 1867; 1970). This rupture is manifest in manifold ways in the transition from rural forms of life to urbanism, industrialisation, capitalism, and gradual economic globalisation including colonialism. This rupture comprises a larger development in which a myriad of factors from map making and navigation to new forms of political-economy and much in between made it possible to conceive of geographical space, and people in it, as delineated or delineable in particular ways as cultures, nations, and so forth (given rise to the "archaeological cultures" issue, see Brinkmann and Arponen 2024 (2025)). The rupture with feudalism constituted a new order whose essential building blocks were the rule of law, personal rights, private life, market economy, liberal constitution, democracy, and emancipation of marginalised groups. The process to establish such a "civil" order took 200 years and was sharply interrupted by political totalitarianism and genocide in the "30 years of global war" between 1914 and 1945. There are reasons to argue that modernity differentiates different spheres of reason: a) science and technology, b) economics, c) law and morals, d) art and liberal culture. These "arenas" of modernity, however, have typically been conceived as unequally important for the realities of modern life as the Baconian powers of science, technology, and economics have taken the centre stage rather than morals and arts.

In any case, with the thought of Karl Marx, the questions of economic power, social relations, and their constitution came to the fore and constitute one of the lasting aspects of the heritage of modernity. Marxist analysis has motivated, both, historical and economic analysis of the socio-political structure of modern and indeed premodern societies (Wallerstein 2007) as well as joined forces with some form of constructivism probing into the epistemological construction processes of power (Foucault 1997 [1970]; Bourdieu 1991). In a similar sense, in archaeology, post-processualism appears to have had one strand of its beginnings in the Marxian focus on power (Tilley and Miller 1984). Historical materialism influenced archaeology formatively also via Marx's thoughts on early stages of human history. Late Marx was highly interested in archaeological studies, since he speculated that there must have been a societal way of life before class societies dubbing this presumptive way of life "original communism". Lawrence Krader (1972) edited the so-called ethnological notebooks of Marx and wrote a long introduction to this edition. Marx's speculation about original communism has roots in ideas (Morgan 1877; Maine 1875) that the decisive criteria for human progress to "higher" stages of human development include the production of food, accumulation of property, sedentism, exchange and trade, *etc*. Morgan was influenced by Rousseau's idea that private property has been overrated in modern societies. Marx himself speculated

that a communal and egalitarian disposition of modern man was "anchored" in archaic dispositions (Krader 1976, 23).

In summary, then, from the perspective of specifically modern philosophical themes, the intellectual heritage of modernity could be said to be structured around a number of main themes discussed above: first, the concept of ontology as it pertains to naturalism and reductionism shaped by emerging natural sciences; second the concept of epistemology pertaining to the dualism of reality and the human conception of it including materialism, culturalism, relativism and social constructivism; and finally, third, the interest in the socio-cultural, economic, and political shaping of power (hierarchy, authority, class, domination) in human society spurred on by the rupture and structural change brought about by the industrial revolution and continuing today further in areas of digitisation, automation, and artificial intelligence. The third theme presupposes a great or, at least, a "middle-range" narrative about the emergence of the modern economic order. While Marx (1904) presented a large-scale stage model of human history, Polanyi (1978 [1944]) presented a middle-range narrative about the societal transformation into a market economy with sustained economic growth.

Now, how do we as philosophers and archaeologists stand to these modern themes and lines of thought? The effects of modernity are naturally not unknown to archaeology, with some delineating the pervasive effects that modern thought has had on the discipline (González Ruibal 2013; Schnapp *et al.* 2004; Thomas 2004).

In the new millennium, many archaeologists have taken an explicitly presumptive, anti-modernist stance, by rejecting individuality in favour of relationality (see Fowler 2016), rejecting any forms of dualistic thinking (see Harris and Cipolla 2017), and the rejection of reductionism (see Ribeiro 2019). In the view of "modernists", modern thought, however, is by no means committed to reductionism and dualism *as doctrines*, but rather, there was also always a sense in which modernity was a *method* of reason, of systemic, analytic thought and observation, free from authorities and traditions (Habermas 2004 [1985]). The accusation of "dualistic forms of thinking" can perhaps be differentiated along the doctrine-method distinction. For example, in times of politisation of expertise and of fake news, upholding a solid concept of modern reason and truth may be more important than ever.

For many in archaeology, contrasting processualism with post-processualism today is beating a dead horse, especially when post-processualism, as it was understood in the 1980s and 1990s, is no longer fashionable, and processual archaeology has been re-invented through the third scientific revolution (Kristiansen 2014). Rather than an archaeology that is explicitly linked to philosophers of modernity, we have now an archaeology that pays respect to modernity in a myriad of different ways. As argued above, archaeology has a tradition to be neither purely scientific, nor purely historical, but always a synthesis of scientific inquiry, empirical field-work, hypothesis formation, abductive reasoning, reflection on conceptual investments, some grain of speculation, and credible narrativity.

Still, archaeology today has become a social science with one of the strongest streams of natural scientific thought harking back to older biological and empiricist epistemologies. With the recent rise of aDNA studies, the spectre of an archaeology dedicated to national identity has come to light (Friemann and Hofmann 2019; Hakenbeck 2019). These studies have allowed the wider public to perceive ethnic identities at a genetic and molecular level, even though a more nuanced look into genetic data demonstrates that ethnic identities are not reducible to genetic signatures (Müller 2013; Furholt 2019). The idea of a national identity, one that corresponds to a specific ethnicity, originates in a modern idea of the

"ancestral land". Nation states recognise their independence because the people that occupy these nations are considered founders; these people view themselves as the heirs of their land. There is a subjective claim of antiquity in the eyes of nationalists (Anderson 2006 [1983]), which has been spurred by aDNA studies.

On a related note, archaeology has been argued to be gradually leaning more and more towards fast science (Cunningham and MacEachern 2016) and the neoliberal logic that drives it. While the practice of history and anthropology remains primarily slow and deliberated, with scholars spending decades researching an ancient author or a pre-literate group of people, archaeology has fully embraced the aggressive and fast-paced commitments demanded by high-impact journals, big funding sources, Big Data, and citation indices (Ribeiro 2019; 2021). The logic that dictates the drive behind Silicon Valley and its entrepreneurial spirit is now present in archaeology, with many scholars searching for the next "big thing" that will launch their careers. This system of "perpetual becoming" leaves archaeologists little choice except to adapt or perish.

Perhaps, the chief challenge in understanding modernity's impact on us resides in the fact that, quite apart from intellectual influences and trends, modernity is also a practical condition, a way of being that imbues society as we understand and live it today (Bennett 2011). As in some sense of fundamentally interpretative sciences, archaeology and anthropology have deeply internalised the interpretative difficulties arising from the discrepancy of the archaeologists' and anthropologists' embeddedness in modernity – so to speak their Heideggerian *Dasein* of being-in-modernity – and the pre-modernity of the archaic ways of life. Archaeology, however, is modern in as far as it points to the matter of fact that modern ways of life are rather exceptional. What is it like to live a pre-modern, non-modern life? Archaeology, ethnoarchaeology, and archaic history are, on the one hand, about "alterity" and "otherness", as the interest in (radical) otherness has been alive since the European Enlightenment (*e.g.* Herder 1800). On the other hand, they may exploit the modern historical method of genealogy in order to research the origins of the modern condition, as the deeply rooted aspirations for "more", that is growth (Ott 2023, part III).

Moreover, modernity is not a static status, much on the contrary, modernity is a process of constant change. To be modern is to keep the political, cultural, and economic machine in a state of perpetual becoming (Berman 2010). Nothing is allowed to stay the same; all that is solid must melt into air (Marx and Engels 2018 [1848]). As the world changes, modern reason reorientates itself to accommodate these changes. Heidegger stated that humanity had reached a point where its historical existence was named according to its energy sources. Humanity, in the time of Heidegger (1977 [1954]), had entered a nuclear age. In our current day and age, the sights are now set on renewable energy sources. In the environmental movements since Romanticism, modern humans criticise the excesses of human domination over nature. There were many proto-ecological movements in the years before 1914 demanding reforms of the industrial ways of life. In the 1970s, similar "ecological" movements emerged. Cultural minorities have now become mainstreaming academic middle classes. Environmental ethics and critical environmental studies (*Umweltwissenschaften*) have been established in modern systems of science.

The new guiding image of our modern age is "sustainability" which was coined in 1713, and this concept reflects not only economic concerns; it also reflects social and cultural concerns (see Ott and Döring 2008). The ideal citizen of our age is one that consumes less of everything – from meat, to objects, to energy. Underlying this

trend is a return to nature; to abandon the luxuries of modernisation and embrace the purity of life that existed prior to modernity (see the organic versus mechanical worldviews; Arponen 2014). Such cultural movements, however, can be traced back to Rousseau, the Romantic movement, Thoreau, "*Lebensreform*", *etc*. This trend, however, threatens to betray itself through a capitalist logic, where "purity" simply consumes another set of commodities, such as organic juices and tourism in exotic wild places. Since markets accommodate any preferences, lifestyles, and fashions, they do so, if such preferences turn "green". The alternatives to capitalistic market societies, however, have been a part of the modern predicament in the 20th century. A classless society at a high level of collective wealth has been a modern idea. To the predicament of modern times belongs, however, the many failures of socialism, terminating in the collapse of the USSR in 1990.

Anti-capitalism has been and is a modern egalitarian way of thought. In the modern mindset, there seems to be a deep longing for pre-modern, especially pre-capitalistic and egalitarian societies. Therefore, speculations about "original communism" have spurred many research projects after 1970. The current trend to "anarchism" and "post-colonialism" follows this tradition. Provocatively, one might state: It takes a decidedly modern sensitivity to recognise and combat "Eurocentrism".

As a project, modernity is perhaps most essentially characterised by the promise of the *method* of reason and systematic reflection rather than by *doctrine*. As such, ideally the project of modernity is never fulfilled, it always remains open. As a method, modernity can also operate on a metalevel and take a reflective interest in its own "otherness", in its own biases. Conceived in such a way, modernity is a hopeful project. In such a project, archaeology can open horizons to the diversity of modern, and pre-modern ways of human life. In doings so, it can stimulate reflection on modernity and post-modernity.

Some words on the contributors and contributions

In the order of appearance:

Artur Ribeiro is a post-doctoral researcher in the Collaborative Research Cluster 1266 "Scales of Transformation" at Kiel University, Germany. His research deals with theoretical topics in archaeology, including the recent book-length study on intentionality in archaeology (Ribeiro 2022). As a former commercial archaeologist, and now a prolific archaeological theorist, in our opening words Artur has contributed a unique perspective to modernity's role in both the scientific practice of archaeology and the complex landscape of theoretical discussions about that heritage in archaeology.

Rachel Crellin is an associate professor of archaeology at Leicester University, United Kingdom. In her contribution, Rachel discusses the predicament of archaeology as it is in many ways a product of modernity, but argues for the need of modernity and archaeology to acknowledge and to explore difference in a manner that transcends the modern/pre-modern dichotomy. Rachel's contribution provides a highly topical overview of the posthumanist, new materialist, and related critical strands of contemporary archaeological thought.

Caroline Heitz is a senior researcher at the Institute of Archaeological Sciences and the Oeschger Centre for Climate Change Research at the University of Bern. Caroline's archaeological work has focused on European prehistoric archaeology, in particular

on questions of human-environment relations, resilience and vulnerability. In her contribution, Caroline brings to bear her considerable knowledge in archaeological theory to provide perspectives on a range of "post-modern" debates in archaeology from metamodernity, the third science revolution, to the digital and material turns.

Jerimy Cunningham is an assistant professor at the Department of Archaeology at the University of Lethbridge, Alberta, Canada. As a former doctoral student of perhaps the best-known theorist of archaeology, Alison Wylie, and with a long-time expertise in ethnoarchaeology in African and South American contexts, Jay brings a deeply theoretically informed view to the table about the practice of anthropological archaeology. In this volume, Jay's contribution presents us with a complex and articulate position on modern reason combining Marxist critical sensitivities about "fast" archaeology, with a keen "wylian" sense that different standpoints matter, but that a systemic and coherent, even if always reflective archaeological practice is possible.

V. P. J. Arponen works as the junior research group leader of the Reflective Turn Forum at the Excellence Cluster ROOTS of Kiel University, Germany. With a philosophical background in Wittgensteinian philosophy of language games, on the one hand, combined with a decade of observing and accompanying Kiel archaeological colleagues in their archaeological interpretations, on the other hand, Arponen's perspective on the heritage of modernity combines Wittgensteinian critique with an awareness of the pragmatics of archaeological research. In his contribution, Vesa attempts to steer a narrow path between the Wittgensteinian argument about the situatedness of human language and reason, but sharing with Konrad Ott (see below) a view of the strength of modern reason to reside in its deliberative or reflective ability to again and again adopt a critical position outside of itself.

Konrad Ott has been a professor of environmental ethics and environmental philosophy at Kiel University, Germany, and has been the leader of the Reflective Turn group in the Excellence Cluster ROOTS and the CRC 1266 "Scales of Transformations" in Kiel. As a master of German philosophy and former doctoral student of Jürgen Habermas, Konrad has a commandeering view of the *longue durée* of German philosophy with a special focus on the deliberative character of modern reason. In his contribution, Konrad revisits the argument of his book-length study about the quantitative and qualitative roots of the Anthropocene. Konrad's contribution is a bold philosophical thesis about grand narratives of the modern condition with an ethical appeal to the power of modern, deliberative and reflective reason. Konrad has published a monograph in 2023 which combines epistemology of archaeology with historical materialism and environmental ethics (Ott 2023). The article overlaps with part 3 of the book.

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Towards Difference

Rachel J. Crellin

This short essay offers reflections on the relationship between archaeology and modernity. I argue that whilst archaeology is a child of modernity, the job of theory and philosophy, from my standpoint, is to help us escape the constraints of modernist thinking to allow the difference of the past to emerge.

In their opening words to this volume, Arponen, Ribeiro and Ott ground archaeology and its relationship to philosophy within modernity. They characterise modernity as multiple but argue it is about a shift from a world grounded in the divine towards one grounded in the secular; this transition is caught up in the emergence of science, rationalism, and nation states with their bureaucracy. They also highlight modernity's relationship with the humanist concepts of the "value and equality of humankind" and the idea of a universalised human nature. As Julian Thomas (2004) has so elegantly demonstrated, archaeology is a child of modernity, so how could its engagement with the world be grounded in anything else? On the one hand, Western archaeology grew out of the rise of science, nation states, and secularism – these things cleared the ground for ancient objects to go from being seen as 'lightning bolts' to evidence of past people.

In my opinion, archaeology has, on the other hand, always been an exercise in exploring difference. It is about an encounter with times and worlds different from our own. As archaeologists we aim to fully appreciate the difference of the

past and not assume that our current ways of living and being are necessarily the same as, or better than, those of the past. We have to escape the idea that the present is the zenith of human achievement; as Serres states, when we see the present in this way, it allows us to think we are "not only right but righter than was ever possible before" (Serres with Latour 1995, 49). Addressing the alterity of the past is an ethical move (Thomas 2004, 235-241). The archaeological encounter with difference means that modernity, all too often, gets in our way. As an archaeologist who primarily focuses on the Neolithic and the Bronze Age of Britain and Ireland, I study times where science, rationalism, and nation states did not exist in the forms we know today; the divine may well have been more important than the secular (though the nature of that divide is historically contingent and radically different from the pre-modern divine). Modernity is the thing I work to escape in my thinking. I need philosophy that makes space for difference rather than philosophy that is built on universalising assumptions. It is also really important to note here that although Euro-American modernity cleared the ground for archaeology in the West, there have always been other ways of thinking, other philosophies, that do not see the world in the same terms and these many ways of thinking include an interest in the past. The turn towards Indigenous philosophies highlights this (Supernant *et al.* 2020; TallBear 2013; 2019; Todd 2016). For those studying the Indigenous peoples of the Americas, it makes little sense to see European philosophy, shaped by modernity, as the starting point for their thinking. Beyond those who study Indigenous groups around the world, it is clear that there is much to be learned from an engagement with alternative philosophies and much to be considered about how to best engage with this thinking in an ethical and non-appropriative manner (Braidotti 2022; Crellin *et al.* 2021; Todd 2016).

The tension between the sciences and the humanities identified by Arponen, Ribeiro and Ott is certainly something that shapes archaeology as a discipline. The slide between relying more or less on either the scientific side of the discipline or the more humanistic is something we can trace through the history of archaeological theory and its engagement with philosophy (Harris and Cipolla 2017). Despite the post-processual critique and its turn away from empiricism, it is still often the case that we value data from the sciences and the humanities differently. The rise of aDNA studies demonstrates this – in the narratives that emerge from this research, the aDNA data is seen as *more* true, and more powerful than other strands of data, such as material culture: Genes trump pot sherds when it comes to writing narratives about the past that draw in aDNA (Crellin and Harris 2020). The different sides of the sciences-humanities dualism are valued differently especially in their relationship to what we might call 'facts' about the past.

My own work draws extensively on posthumanist and new materialist philosophy. Part of the appeal of these approaches lies in the way that they combine the sciences and the humanities from the outset. The two are not separated or valued hierarchically. New materialism draws on both the hard sciences and the humanities to understand matter and the role it has played in the production of history (Barad 2007; Bennett 2010; Braidotti 2022; DeLanda 2002; 2016; Coole and Frost 2010). It is an approach which argues all things emerge from their relations and are constantly in motion. For new materialists, matter is never just brute, dead, substance manipulated by human agency, but instead it is ever-changing, full of potential, and unpredictable (Gosden and Malafouris 2015). In new materialist thinking, the properties of materials are emergent, immanent, and always relational.

Posthumanism can be thought of as an umbrella term that includes a range of different approaches that share a critique of humanism at their core (Braidotti 2013; 2022; Ferrando 2019): We can think of new materialism as a part of this. Posthumanist feminist philosopher Rosi Braidotti's (2022, chap. 1) recent intervention in this space makes it clear that this is not a rejection of humanism *per se*, or an argument that humanism has not been a powerful force, but a move beyond humanism to try and overcome some of its shortcomings. The philosopher Francesca Ferrando (2019) offers a helpful definition of posthumanism: she defines it as a post-anthropocentrism, a post-humanism, and a post-dualism (all three aspects are explored more below). The post- here is about a move to critique and an attempt to move beyond.

In both new materialism and posthumanism, post-dualist thinking is central. Post-dualist thinkers work hard to avoid a variety of dualisms in their work. This includes thinking that sets the sciences and the humanities up as a dualism. Instead, posthumanist and new materialist approaches work to entangle ideas from both. In part, this draws on insights from feminist philosophies of science that demonstrate that science does not happen in a vacuum separate from the rest of the world. The results of scientific research are shaped by the social and political contexts in which that research is carried out (Haraway 1991; Harding 2004). There is no perfect empiricist or positivist position from which we write or carry out science, we do it from within our own context (Haraway 1988).

In addition to their engagement with the sciences, another strength of new materialism and posthumanism is the way they create the space necessary for difference to emerge. Post-anthropocentrism here refers to how modernist thinking has positioned humans as the most important species on earth, establishing a dualism between the human and the non-human. New materialism and posthumanism are both relational and argue that not only humans but also animals, plants, things, weather systems, gods, and landscapes have the potential to shape the world (see Crellin 2020, 161-164). In this kind of thinking, we might start from a flat ontology (DeLanda 2002) where we do not presume in advance that humans are the most important protagonists, that binaries dominated past thinking, or that animals, rocks, plants or landscapes were seen as less agentic or powerful than humans (for an extended discussion of this often-controversial topic see Cipolla 2021). That flat ontology therefore offers us a way to:

> *"*[...] *help resist anthropocentrism and dualistic modes of thought. Similarly, it helps researchers avoid projecting the nature (or essence) of different entities and their relations on to their research subjects. In other words* [...] *the flat ontology is an argument for ascertaining the nature of the world through observations" (Cipolla 2021, 512).*

For me, the flat ontology offers a way to avoid projecting modern ways of thinking and organising the world onto my data. It offers a philosophical tool for the creation of different worlds.

Creating the space for difference is an excellent first step in our research and analyses. However, all too often in Western thinking, difference leads to value judgements. Elizabeth Grosz (2005, 5) identifies two main approaches to difference – difference through comparison where we measure against a standard and difference through negation where things are defined by what they lack. Braidotti (2013; 2022) is central here as her work has developed the post-humanist position. She highlights how the Humanist figure of Man is specific; it is a white, straight,

middle-aged, able-bodied, neurotypical, educated man. Humanist Man has been constructed as the ideal human – and other human forms have been compared to him and are defined by what they lack in comparison. Women are defined as not men, black people as not white, gay people as not straight, disabled people as not able-bodied. Braidotti (2022) highlights how despite humanism's aims, it has unfortunately had some negative consequences for many different groups of people who differ from the defined humanist Man. Posthumanist feminism, drawing on the philosophy of Gilles Deleuze (2004), reconceptualises difference not as negative but as the primary productive force in the world (for an extended discussion see, Stark 2017, 79-97). It provides the ground from which to explore difference in the past separated from the negative and separated from the idea of lack. Penny Bickle (2020) has utilised this concept of difference to rethink gender in the European Neolithic very effectively.

One way to think about this is to turn back towards the question of the relationship between the sciences and the humanities discussed earlier. As argued above, in some archaeological work it is clear that the results from the sciences are valued more highly than those from the humanities – this reflects the hierarchy in the humanities-sciences dualism. When we operate in a posthumanist and new materialist framework, we cannot only think about how the humanities and sciences are always entangled, but we can also think about how the different things revealed by different methods are productive. aDNA shows us one aspect of the past, pot sherds another – the difference here should be productive, it should reveal different things (Crellin and Harris 2020). These different strands of evidence will not always agree because of the complexity of the past worlds that we study and the methods that we use to do so.

When we met in Kiel, one of the questions we considered was what is the position of philosophy in archaeology? My engagement with philosophy, more usually couched as archaeological theory, does two key things. Firstly, theory and philosophy help me to ask archaeological questions and solve archaeological problems. Asking the right kinds of questions is central to being able to say new things about the past. If I want to explore violence in the European Bronze Age, I need tools that help me think through the relationship between my evidence and interpretation, tools that help me know what I can and cannot say with confidence, tools that allow me to integrate the empirical results from wear-analysis with the more humanities derived knowledge that we have about what life was like in the European Bronze Age. The battered swords, spears, and shields do not simply tell the story – work is involved. Lines of evidence must be brought together, and they rarely agree – theory helps guide this process.

Second, and for me this is the more important aspect, theory and philosophy help me to think differently, to escape the confines of a brain born, raised, and educated in modernity. The challenge of archaeology is to take the broken fragments of things, often thousands of years of old, and to use them to tell stories about past worlds. This is never a straightforward exercise – it always involves a series of interpretive steps as we go from broken pot sherds and flakes of flint to past worlds. The real trick in this process is to avoid making the past a pale reflection of the world we live in, whilst balancing this against long-term social processes. I have discussed the challenge of not creating a Bronze Age that looks like the modern west where charismatic, wealthy, fit and able white men became powerful chiefs through the acquisition of wealth allowing them to subjugate others (Crellin *et al.* 2021). The stories we tell, however, do also need to take account of the fact that both gender and violence clearly became important concerns in the period in new

ways (Hermann *et al.* 2020; Robb and Harris 2018). We want to tell long-term stories about the development of the patriarchy (Cobb and Crellin 2022), but these stories need to be subtle and nuanced, grounded in the data *and* theoretically sophisticated. When I teach archaeological theory, I tell my students that engaging with particular theories and philosophies is like putting on a pair of tinted glasses – the whole world looks slightly different, something new emerges.

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Archaeology and Metamodernity

Caroline Heitz

With this text, I seek to engage in the dialogue on 'discourses of modernity' (Arponen *et al.* in this volume) by discussing in what directions Archaeologies of the current era are heading, an era that some scholars refer to as 'post-postmodernity' or 'metamodernity' (Vermeulen and van den Akker 2010; Gibbons 2017; Andersen 2019). Here, I pick up where my talk 'On the Edge of Metamodernity – Archaeology after Postmodernism' that I gave during the workshop on 'Philosophy of Archaeology' in Kiel in 2020 had left off.[1] Since then, the development of my thoughts on this subject has been an ongoing open process. This paper is a condensed and revised version of similar thoughts that I have recently developed in German (Heitz 2023b). In it, I outline some current observations and preliminary thoughts, knowing that research-historical transformations can often be better understood in retrospect, however.

Introductory remarks on discourses of modernity – or modernities

In the "Opening Words" of this volume, modernity is understood from a philosophical perspective which places emphasis on its aspect as a broader direction of thought,

1 However, my engagement with this topic dates back to my PhD project that had another main core subject (Heitz 2018; Heitz 2023a).

for which empiricism and reductionism as well as transcendental idealism are characteristic. As Arponen *et al.* (in this volume) argue with Jonathan Israel (2001), 'modernities' might be the better term to describe the plurality of phenomena that are referred to as modernity. In my view, the plural form lays the emphasis on the multitude of perspectives, inventions, achievements, and practices that were part of the many different yet contemporaneous *'Lebenswelten'*, or lifeworlds, respectively (Schütz 1974; Schütz and Luckmann 1975; Habermas 1981; Kraus 2017), that one might understand as a plurality of modernities. Furthermore, like the authors of the "Opening Words" (Arponen *et al.* in this volume) briefly mention citing Thomas (2004), modernity is in more general terms a period or era that is marked by

> *"an epochal shift from a period of 'onto-theological order' [...] towards one of secular order, secular reason, constitutional law, and the humanist concept of value and equality of humankind"*

that gave rise to

> *"methodological science, rationalism, universalisation of human nature, nation states, and secular bureaucracy" (Arponen et al. in this volume, 12).*

I would certainly agree. As a trained historian, social anthropologist but first and foremost archaeologist with a focus on social archaeology, I am interested not only in philosophical, but also the historical and social dimensions of modernity that make up different modernities. In my view, it is helpful to emphasise that the plurality of modernity has different temporalities. Different strands of modernities run parallel but also follow each other in time. I propose to understand modernity as a plural concept in the sense of modernities in two ways. On the one hand, the term might refer to a variety of contemporaneous modern lifeworlds during the epoch of modernity, on the other hand, modernity can function as an umbrella term for various successive periods that dealt with the philosophical and scientific-theoretical achievements of modernity, such as modernity itself or postmodernity. The references of, *e.g.*, postmodernity back to the philosophical and theoretical contents of modern thought, as well as the parallelisms and continuities show that epochal changes are rarely marked by clear cuts but rather by a temporal flow of transformations.

On this basis, I would like to subsequently share my observation that archaeology – or archaeologies, understood as a dynamic entanglement of material-discursive social practices – is currently undergoing fundamental changes that are related to more general transformations of the sciences, but also of our lifeworlds as such. I will argue that several epistemological and ontological shifts have occurred in the humanities and the social sciences in recent decades that also affect archaeology and move the latter beyond the post-processual postmodern stance. Thus, I put forward the thesis that we are currently experiencing a phase of transformation which can be understood as a change of epoch, from postmodernity to metamodernity. From a broader perspective, I will argue that the constructivist-idealist postmodern stance as such has lost traction (Hillmann 2007, 694-695). Recurrent armed conflicts, financial and refugee crises, the Sars-Cov-2 pandemic, resource scarcity, environmental pollution and global warming, the development of artificial intelligence (AI) or the Internet of Things with its technologies to connect the physical and the virtual, lead to an increased engagement with what is 'real', the 'factual', or the so-called 'alternative facts' in social debates (Heitz 2017a; Heitz 2018, 75-90). In archaeology, the following tendencies can be observed: Shifts and innovations in

research practice, referred to as the 'science turn' (Kristiansen 2014; 2017) and the 'digital turn' (Katerbow *et al.* 2020; Kossek 2012), describe the current increasing relevance of scientific methods, digitisation, and quantification, as also mentioned in the "Opening Words" of this book (Arponen *et al.* in this volume).

Furthermore, new philosophical and theoretical schools of thought, such as the so-called 'material turn' or 'new materialism', as well as the 'ontological turn' and the 'new realism' (Alberti 2016, 163-169; Heitz and Stapfer 2017, 17-28) lead archaeology beyond anthropocentrism and idealism of (post)modern thought. At the same time, however, postmodern theoretical insights, such as the emphasis on subjectivity, situatedness, contextuality, and historicity of knowledge production, continue to be considered.

The science, digital and material turn – Metamodernity in the making

During the past few years, ontological and epistemological questions about what reality is, what possibilities of knowledge does archaeology have about the past and/or present, and what forms of knowledge construction are available to us are again being discussed more intensively. From the perspective of the history of science, three crucial epistemological changes, which can be referred to as 'turns' in the humanities and social sciences, are indicative: the 'science turn', the 'digital turn', and the 'material turn'. The designation of such changes as 'turns' was influentially used by the American philosopher Richard Rorty, who in 1967 published a programmatic anthology titled *The Linguistic Turn*. There it was argued that cognition is always linguistically mediated, making language the primary object of philosophical inquiry (Rorty 1967). Since then, other epistemological shifts in the humanities and social sciences have been referred to as turns, for example, the 'cultural turn' (Bachmann-Medick 2006). Referring to such shifts in perspective as turns is helpful because they allow us to highlight and reflect on individual transformative moments from the constant stream of changes in the history of science. Turns extend beyond new research foci or new fields of inquiry and objects of knowledge in the sense that, as it were, new categories of analysis and concepts become relevant as means and media of knowledge (Bachmann-Medick 2006, 26). The literary and cultural theorist Doris Bachmann-Medick proposed that one should only speak of a turn when new research topics "flip" to the level of concepts, when descriptive terms become cross-disciplinary conceptual-methodological categories of analysis. The latter, she argues, is the case when they no longer remain merely objects of knowledge but become themselves means and media of knowledge production (Bachmann-Medick 2019, 5-6). What is not emphasised enough in this conceptualisation, in my opinion, is the temporality of such scientific processes, which are not always programmatically controlled, but rather gain momentum over time. The precise turning point can, if at all, be best determined retrospectively in terms of the history of science. It could be more helpful to think of turns as transformation phases, which, depending on the turn, may have their origins in technological and methodological innovations (*e.g.* the case for the digital and science turn) or rather in epistemological considerations as well as in cultural and social constellations (*e.g.* the case for the material turn). However, these strands cannot always be separated clearly from one another. Regarding turns, it can be assumed that hardly all areas of knowledge production change abruptly, but that, for example, cross-disciplinary conceptual-methodo-

logical categories of analysis emerge only gradually. The scientific strands that result in turns can emerge in parallel, whereby the participating scientists influence each other. Furthermore, the labelling and proclamation of turns in itself also has something to do with the pressure in academia to access and occupy new fields of research and to deliver new findings in short periods of time, as is also mentioned by the authors of the "Opening Words" (Arponen *et al.* in this volume). Regarding the science and digital turn, I would agree with Doris Bachmann-Medick's opinion that most epistemological turns originate in socio-political processes (Bachmann-Medick 2019, 4). However, to understand the epistemological changes related to the science, digital and material turns, and how far these changes lead beyond postmodernism, an in-depth examination of the three turns is inevitable.

The science turn

The archaeologist Kristian Kristiansen uses the term 'third science revolution' or 'science turn' to refer to the observation of the increasing relevance of natural science approaches – especially from disciplines of life sciences – in archaeology as well as other humanities and social sciences over the past few decades (Kristiansen 2017, 122). A similar observation is, for example, also made by the sociologist Mike Laufenberg for this discipline (Laufenberg 2011, 46). Reflecting on the history of science in archaeology, Kristian Kristiansen (2014, 14-17) argues in his article "Towards a new paradigm? The Third Science Revolution and its Possible Consequences in Archaeology" that after archaeology was established as science in the 1850s to 1860s and the methodological breakthrough of C14 dating in the post-war period (1945-1955), we are currently in a third phase in which scientific approaches promise to revolutionise archaeology once again. Already in the second half of the 19th century, when the natural sciences and the humanities and their disciplines began to emerge in Europe, epistemological differences became apparent (Bräunlein 2012, 31). On the one hand, there were the natural sciences with their realism, which were dedicated to the objective understanding of the laws of nature and contributed to a great increase in knowledge through their methodological and empirical achievements. Systematic observations and descriptions, measurements and experiments led to a scientific claim to truth, which was opposed to the humanistic methods of gaining knowledge (*ibid.*). The English novelist and physical chemist Charles Percy Snow described these different ways of knowledge production and claims to knowledge as 'two cultures' and related them to two oppositional epistemological stances that, as he argues, run throughout the history of science and repeatedly lead to tensions (Snow 2001 [1959]; see also Arponen *et al.* 2019, 1672-1673; Laufenberg 2011, 52-54; Sørensen 2017, 101-115).

As it is also mentioned in the "Opening Words" (Arponen *et al.* in this volume), Kristian Kristiansen stated that in current archaeological research, microbiological methods, such as aDNA and isotope analyses in particular, are gaining momentum what leads to epistemological challenges (Kristiansen 2014, 13, 20). Both methodological fields require a reorientation in scientific collaboration between the disciplines involved, which need to merge into new research directions. In this context, aDNA research in particular has already come under criticism, with theoretical shortcomings in the interpretation of results and ethical obligations being points of condensation in the discussion (*e.g.* Furholt 2017). While the methodological complexities of aDNA research may not always be easy for archaeologists to understand, geneticists might lack the necessary archaeological knowledge about, *e.g.*,

social configurations and cultural forms. Especially the simplistic interpretation of paleogenetic results in conjunction with mobility and migration, based on the outdated cultural-historical approach and related political instrumentalisations, offer epistemological challenges from an archaeological perspective (Furholt 2017; Sedig 2019). Although there are some first attempts, new cross-disciplinary conceptual-methodological categories of analysis and concepts that mediate between natural sciences and humanities or synthesise them in respective research projects still need further development (*e.g.* Ribeiro 2019; Källén *et al.* 2021, 151-152; French and Chamberlain 2021; Shennan and Sear 2021). Overall, the postmodern idealistic-constructivist standpoints are challenged in their viability by the increasing interest in natural scientific as well as quantitative approaches (cf. below). In the sometimes rather polarising debates, the knowledge claims of the social sciences and the humanities are overstated as 'subverting reality' and those of the natural sciences as 'creating reality' (Laufenberg 2011, 52). In archaeology, but also in other humanities, social sciences and philosophy, these debates have led to a renewed in-depth epistemological engagement with scientific realism, as will be explained below (*e.g.* Sintonen 2020; Laufenberg 2011, 53; Gonzales 2020; Gabriel 2018).

The digital turn

In parallel with the increasing impact of scientific methods, digital technologies and the accompanying digitisation of information have become more important in archaeology in the last decades (Kaden 2016, 17). This certainly accounts for most contemporary lifeworlds too. In Europe, the pervasiveness of digital technologies and digital information has reached nearly all aspects of life, including economy, politics and culture (Katerbow *et al.* 2020, 4). The associated changes and effects brought about by the use, application, and dynamic development of digital technologies can be referred to as 'digital transformation' or 'digital turn' (Katerbow *et al.* 2020; Kossek 2012).

In archaeology, too, the importance of digital technologies and quantitative methods in research practice is increasing (Huvila 2018, 1-10; Kristiansen 2014, 17-18). The centrality of digital technologies goes so far that hardly any work is carried out without using digital solutions at some point – after all, nearly all forms of funding, documentation, investigation, publication, mediation, and teaching are now digitally supported. The ever-increasing amount of digital information or data and the increase in internationally accessible repositories go hand in hand with the call for extensive data management as data analysis is becoming more relevant in archaeology (Huvila 2018, 3). In addition, new opportunities for transparency of the research process are available and are also increasingly required by research funding agencies in return. The latter promote and demand 'open access' and 'open data' forms of publication in the sense of 'reproducible research' and 'open science' (Effinger and Büttner 2015; Marwick 2017; Costa *et al.* 2013). Overall, the accessibility of data fosters data-driven research and quantitative archaeology as such, from descriptive statistical methods to simulation and modelling (Kristiansen 2014, 17-18; Nakoinz and Hinz 2015).

It needs to be questioned how these initially technological and methodological transformations are changing scientific practice and whether they are also accompanied by changes at the epistemological and ontological levels. In the impulse paper of the German Research Foundation (DFG) on the 'digital transformation' in science published in 2020, it is argued that digital research practices and information infra-

structures are or will be central in almost all disciplines (Katerbow *et al.* 2020). The development and use of digital technologies in the sciences will lead, as it is stated there, to transformations that encompass epistemic, ethical, legal, technical, infrastructural, organisational, financial, and also social terms (Katerbow *et al.* 2020, 4). The authors emphasise that these transformations will also impact research practices leading to epistemic, disciplinary, ethical, social, economic, and research policy implications (extensively Katerbow *et al.* 2020, 7-10). For example, as data-driven scientific practices are becoming more important, they lead not only to new sources of information, methods for empirical research and its communication but also to new standards of so-called 'good scientific practice'. The relevance of computer science, mathematics, and statistics in other disciplines fosters a greater disciplinary interdependence as well as the emergence of new disciplines and the increased relevance of interdisciplinary fields. Examples include bioinformatics, computational linguistics (Katerbow 2020, 7) – or the 'digital humanities' (Schreibman *et al.* 2015). The current relevance of quantitative archaeology and archaeoinformatics, whose beginnings go back to the 1970s and processual archaeology, can also be seen in this context.

Despite these many innovations and opportunities, the discussion of the digital turn in archaeology still lacks critical reflection and systematic analysis of its consequences, for example, in relation to sustainability, equity, wealth and poverty, or ethics (Perry and Taylor 2018, 16). Moreover, the digital turn has had little impact on theorising in archaeology and the epistemological shifts that may accompany it, which need deeper reflection. Sara Perry and James S. Taylor proposed to address these desiderata in future 'digiTAG' conferences (Perry and Taylor 2018, 18), while the 'Central Europe Theoretical Archaeology Group' (CE TAG) held its 2021 meeting on 'Theoretical Approaches to Computational Archaeology'.[2]

Overall, like the science turn, the innovations referred to as the digital turn also seem to challenge the prominence of idealistic-constructivist and subjectivist viewpoints. The real becomes relevant through the contrasting of the physical with the virtual but also precisely through their intertwining. The epistemological aspects in this regard have generally been little studied to date (Kaden 2016, 9-20). Furthermore, the digital turn seems to be transforming the humanities into 'post-humanities': the question of what it means to be human is raised again (Kaden 2016, 18). Interestingly, there is a link here to posthumanism, in which the particularity of the ontological position of humans is questioned (Ferrando 2013). To conclude, the epistemological and ontological shifts and consequences associated with the digital turn thus did not primarily take place in immediate science-theoretical reflection on digital technologies and data per se. Rather, they occurred in philosophical, sociological, anthropological, gender-historical, and cultural-scientific debates on posthumanism, which in turn were entangled with and informed by the experience of the digital turn in social worlds, the relational intertwining of humans and non-humans in social practices, and new discussions about the virtual and, above all, the material, as will be shown in the following.

The material turn

Alongside the changes associated with new scientific methods and digital technologies, recent decades have seen a new turn in the social sciences and the

2 https://www.facebook.com/Central-Europe-Theoretical-Archaeology-Group-CE-TAG-322408878365419 [accessed 29 January, 2022]; see also: https://archaeologicalnetworks.wordpress.com/2016/10/04/digitag2-archaeological-storytelling-and-the-digital-turn [accessed 5 May, 2022].

humanities towards 'things', 'human-thing relations', and epistemological and ontological fields of inquiry concerning 'materiality'. The change in direction of these different philosophical and theoretical approaches from the 'material culture studies' to 'new materialism' are referred to as the 'material turn', even if it is not a unified body of theory (Bräunlein 2012; Folkers 2013; Hicks 2010; Hofmann 2016; Hoppe and Lemke 2021). The preoccupation with things has been central to archaeology – as well as to anthropology – from the beginning, so that in these disciplines one can speak of a renewed theoretical turn toward things rather than a turn per se (Olsen 2012, 20). In my view, it is important to emphasise that the 'material turn' was characterised by several epistemological and ontological shifts that had different backgrounds and contexts in the history of science.

At the beginning of these shifts stands what is referred to by the archaeologist Dan Hicks as the 'material-cultural turn' (Hicks 2010, 45-46). The latter is closely linked to the material culture studies launched by British scholars in the 1980s (Hicks and Beaudry 2010; Hicks 2010, 50-53). Dan Hicks has extensively reviewed the theoretical history of the material-cultural turn (Hicks 2010). Accordingly, I will only touch on a few key points here. The material culture studies built on the fact that archaeology and anthropology shared material culture as a field of inquiry (Heitz and Stapfer 2017; Hicks and Beaudry 2010, 4-5; Hicks 2010, 45). Contributions came primarily from anthropology, ethnoarchaeology, post-processual archaeology, and consumer studies (Hicks 2010, 44-64). They offered an epistemological response to the question of how to relate the social and cultural to the material. Humanistic themes, such as consumption, identity, experience, and cultural heritage, were newly explored by including the material culture (Hicks 2010, 26). Crucially, things were no longer understood as passive objects shaped by humans, but as participants in social actions and configurations, and thus taken as indispensable components of cultural and social practices. The material-cultural turn was thus first and foremost an epistemological shift toward things as central aspects in the production and reproduction of social and cultural forms.

The post-humanist approaches of the second epistemological shift that followed the material-cultural turn, and which I also count as part of the material turn, are discussed under the term 'new materialism' (Folkers 2013; Alberti 2016). Whereas the works of the material-cultural turn in the 1980s and early 1990s focused on symbolic meanings and the constitutive role of things in social practices and relations, from the mid-1990s the field of knowledge shifted in the wake of the new materialism to human-thing relations and materiality per se (Hicks 2010, 64-78). In semiotic and action-theoretical approaches, most of which conceptually assumed a Cartesian separation of body and mind, as well as culture and nature, things as human-made objects had mostly played a subordinate role in human-thing relations, as humans alone were ascribed agency and thus control over the supposedly passive materials and things (Heitz and Stapfer 2017, 17-20, 24-28). This asymmetrical view of human-thing relations and its underlying dualisms are deconstructed by scholars of the new materialism and relational concepts of 'materiality' are proposed instead (Heitz and Stapfer 2017, 17-20, 24-28; cf. DeMarrais *et al.* 2004; Ingold 2007; Knappett 2014).

Representatives of the new materialism argue, on the one hand, with the relationality of human-thing relations and – besides the discursive – with the practical, embodied experience of things beyond verbalisation (Hahn 2005, 27-6). At its core stands the recognition that the perception and experienceability of things depends both on their material properties or qualities but also on the individu-

al, situational experience of humans with their social and life-historical context (Knappett 2014, 4700).

Epistemologically, this leads to a recourse to theories of thing-perceptions that were already formulated in the mid-20th century by representatives of phenomenology and cognitive psychology (cf. Thomas 2006; Soentgen 2014, 226). For example, the phenomenologist Martin Heidegger had argued that in everyday life we have a habitual relation to things because we know their way of being by experience (Heidegger 2000 [1950], 170-173). However, when a thing, *e.g.* like a jug, breaks into pieces, we develop an objectified relation to it because deciding what to do with it, whether to repair it or throw it away, requires contemplation, investigation, and reflection that go beyond mere habitual experience and actions (see Knappett 2014, 4704). Thus, the perception of things depends on us and the things themselves, as well as on the context in which we relate to them. Moreover, perception is not only dependent on our senses, but also on our experience and attitude towards things, as well as the possibilities for action that they offer through their materiality.

Such a relational understanding of human-thing-relations has been described by some theorists using metaphors such as network (*e.g.* Latour 2010), meshwork (*e.g.* Ingold 2007), and entanglement (Hodder 2014, 94; cf. Knappett 2011). For example, the 'actor-network theory' (ANT), proposed by the sociologist Bruno Latour and others, addresses how relationships and ties between things, people, places, technologies, knowledge, norms, and values are interconnected. They are established but also dissolved and transformed through communicative processes (Latour 2014). Non-humans thus also become actors or 'actants' (*ibid.*). In such symmetrical approaches, which have also been applied in archaeology (see Olsen 2012; Shanks 2007), both must therefore be equally considered. The debates on the agency of things – or the material agency – that followed, challenged anthropocentric perspectives according to which agency is the sole preserve of humans. In his seminal article 'Materials against Materiality', the social anthropologist Tim Ingold (2007) has argued against the idea of the agency of things and concepts of materiality. He claims that things are only active because they are subjected to the physical forces of the world and their materials are part of the ever-changing material flux of the continuously (trans)forming world (Ingold 2007, 12; Ingold 2013, 19, 25-26, 93-95). Moreover, he emphasises that materials become temporarily entangled in the generative growth of the world and criticises that with metaphors of networks the world is conceptualised as consisting of disparate, interconnected entities (Ingold 2007, 7, 13). However, with the material turn, the conceptualisation of the world as a collection of disparate entities, the separation of objects and subjects, and the humanistic asymmetrical human-thing relations were thus overcome and replaced by relational, post-humanistic concepts of a world that is constantly forming and transforming itself through relational processes. Accordingly, approaches of the new materialism consequently led to a third shift in perspective: from focusing on human-thing-relations to the formation and transformation of things themselves and thus to their ontological status – as well as the one of humans. I will outline the consequences in the following.

The third shift that is characteristic for some new materialist approaches is referred to as 'ontological turn' (Alberti 2016). The relevant central theses, shared by most of these respective works, have been highlighted by the archaeologist Stefan Schreiber (Schreiber 2018, 99, 99-119):

- Arguing from a post-humanist perspective that transcends anthropocentrism, humans are 'not special', in the sense that they are not independent or prior entities, but inseparably intertwined with the world and constituted by this relationality (Barad 2012; Latour 2008; Hodder 2014; Olsen 2010; Olsen and Witmore 2015).
- Things – be it subjects, objects and/or concepts – emerge relationally and are contingent, from which it follows that things can be materialised differently and to different degrees (Fowler and Harris 2015; Ingold 2013; Latour 2002).
- Things are also conceptualised by some theorists as 'intra-active affordances' (especially Barad 2012; also: Bryant 2011; Harman 2005; Latour 2002). By the latter term, the physicist and philosopher Karen Barad wants to emphasise that it is not pre-existing entities (things) that come into relation with one another through interactions. Rather the entities or things themselves come into being through the relational process – for example, through boundary drawing and the bringing forth of emerging properties – which she calls 'intra-action' (Barad 2012; Schreiber 2018, 106).
- Accordingly, materiality is not a property contained in things but the qualities of things in the world, which is always in a state of flux of becoming, are repeatedly constituted and configured by the relational processes (Barad 2012; Ingold 2013).
- In some approaches of the new materialism, things are understood as 'assemblages' (Deleuze and Guattari 1977; DeLanda 2016; cf. Schreiber 2018, 111-116). By contrasting the figures of the tree and the rhizome, the French philosophers Gilles Deleuze and Félix Guattari use them as metaphors for respectively, filiation and alliance, while assemblages are understood to be rhizomatic and can be conceptualised with conjunctions such as 'and … and … and…' (Deleuze and Guattari 1977).[3]
- Relationally constituted things form 'flat ontologies' (DeLanda 2002), by which is meant that none of these thing-entities is prior, but they all have the same ontological status (see above).
- Furthermore, the different approaches of the new materialism are united in the opinion that things – with their different grades of materialisation – are 'real' in the sense of the realism of the relations described above (Barad 2012; Harman 2009; Latour 2002).

The last two points show that an ontological shift has been made in most approaches of the new materialism. This ontological turn seems to lead away from epistemology at first sight, which appears to have become irrelevant in favour of the preoccupation with ontology. That this is not the case, however, as is already shown by the 'new realism of relations' that is at the core of such theories of the new materialism.

Overall, the material turn, like the digital turn and the scientific turn, led to a new reflection of what things are, a new discussion of the real and a fundamental criticism of the one-sidedness, the asymmetry and the anthropocentrism of constructivism and thus the postmodern idealist stance (Hicks 2010; Laufenberg 2011). Relational, symmetrical approaches that understand human-human,

3 The metaphor of assemblage is rejected, for instance, by Tim Ingold, who in his essay 'One World Anthropology' proposes to understand the world not as 'coming together' but as 'growing together' and thus as correspondence (Ingold 2018, 160).

human-things, or human-world relations generally as being constituted in mutual relations challenge postmodern and thus post-process idealist-constructivist positions. The latter had overemphasised the mental-subjective aspect in the constructivism of human experience and neglected the bodily aspects as well as ontological questions. In this sense, the material turn is an epistemological as well as an ontological turn that leads to standpoints of a new realism. Overall, the challenge is that the sole validity of approaches to post-processual archaeology that argue from an idealist-constructivist standpoint is no longer given, considering the experiences, insights, and effects of the material, digital, and science turn. In archaeology, new theoretical and methodological avenues need to be explored that lead beyond the standpoints of postmodernism and reach into what can be referred to as 'metamodernism'. What distinguishes metamodernity as one of the modernities will be approached in the next section.

Metamodern archaeology – Ontological and epistemological foundations

The epistemological and ontological shifts outlined above are not limited to archaeology, but are similarly observable across the social sciences and the humanities in general (*e.g.* Kristiansen 2014; Laufenberg 2011, 46-48, 53). Kristian Kristiansen raised the legitimate question of whether we are currently moving toward a larger paradigmatic shift or possibly even an epochal upheaval, from postmodernism to a revised modernity (Kristiansen 2014, 23) – or a kind of 'modernity 2.0' and Processual Archaeology 2.0. Thus, the debate about the end of the postmodern era that was already launched in other humanities in the 1990s has now reached archaeology as well. The literary theorist Linda A. Hutcheon proclaimed the end of postmodernism as early as 1989:

> *"Let's just say it: it's over. The postmodern moment has passed, even if its discursive strategies and its ideological critique continue to live on – as do those of modernism – in our contemporary twenty-first century world.* [...] *historical categories like modernism and postmodernism are, after all, only heuristic labels that we create in our attempts to chart cultural changes and continuities.* [...] *Post-postmodernism needs a new label of its own, and I conclude, therefore, with this challenge to readers to find it and name it for the twenty-first century" (Hutcheon 2002* [1989], *165-166).*

Especially in recent years, postmodernism as a strand seems to have lost traction. One reason that is brought forward to explain this is that there is an increasing engagement with global problems, so-called 'real-world problems' on a societal level, as literary theorist Alison Gibbons puts it (Gibbons 2017, 12). With that she refers to social and environmental challenges that confront us in unmistakable ways, which creates contradictions and friction with the constructivist idealism and relativism of postmodernism. These are being processed not only in politics and science, but also increasingly in art and culture (Vermeulen and van den Akker 2010). In my opinion, many of these current challenges need to be seen in relation to the increasingly interconnected and interdependent world that might be perceived as challenging: the interdependencies in human-environment or human-thing relations, reflected, for example, in the so-called Anthropocene, global warming, pollution, resource scarcity or the Sars-Cov-2-pandemic, the increasing accumulation of things as well as waste on our planet and even in

space, the internet of things and artificial intelligence, the reignited debate about truth, reality, and factuality (like the 'post-factual age', 'post-truth', 'alternative facts') and the role of new media in global politics (cf. Gibbons 2017; Heitz 2017a). For these partly contradictory experiences and strands of thought, the cultural theorists Thimotheus Vermeulen and Robin van den Akker have proposed the term metamodernism and characterised the latter as follows:

> *"We will argue that this modernism is characterized by the oscillation between a typically modern commitment and a markedly postmodern detachment. We will call this structure of feeling metamodernism. According to the Greek-English Lexicon the prefix 'meta' refers to such notions as 'with', 'between', and 'beyond'. We will use these connotations of 'meta' in a similar, yet not indiscriminate fashion. For we contend that metamodernism should be situated epistemologically with (post) modernism, ontologically between (post) modernism, and historically beyond (post) modernism" (Vermeulen and van den Akker 2010, 3).*

Thus, they suggest that the change from postmodernism to metamodernism could be understood retrospectively from a historical perspective as an epochal change, from postmodernity to metamodernity. Epochal changes can rarely be narrowly located in time and only inadequately represent the inexorably preceding flow of transformations. But the concept of metamodernity is, in my opinion, helpful in describing the ongoing phase of transformations that included the three turns described above. The outcome of all of these changes will only become fully apparent and thus reflectable in retrospect. Until now, a strand of metamodernism has developed that encompasses various arts, humanities and social sciences as well as philosophy (*e.g.* Van den Akker and Vermeulen 2015; Gibbons 2017; Turner 2015; Kersten and Wilbers 2018; Latham and Rogers 2021; Bargár 2021; Rowland 2021). Here, the ontological and epistemological aspects of metamodernism are of particular interest, which draw on both, the modernism of modernity and postmodernism of postmodernity, like Thimotheus Vermeulen and Robin van den Akker state:

> *"Both the metamodern epistemology (as if) and its ontology (between) should thus be conceived of as a 'both-neither' dynamic. They are each at once modern and postmodern and neither of them. This dynamic can perhaps most appropriately be described by the metaphor of metaxis. Literally, the term metataxis (μεταξύ) translates as 'between'. [..] The metamodern is constituted by the tension, no, the double-bind, of a modern desire for sense and a postmodern doubt about the sense of it all" (Vermeulen and van den Akker 2010, 7).*

Epistemologically and ontologically, then, metamodernism is about a third way, or many different intermediate ways, which means oscillating between realism and idealism (Gibbons 2017). There is currently a debate about what such third metamodern ways might look like in research, ways that lead beyond postmodern thought without, however, neglecting its achievements.[4] With reference to archaeology, there are in my view several philosophical and social theoretical approaches which could be interesting as an ontological and epistemological

4 https://www.prospectmagazine.co.uk/philosophy/after-relativism-simon-blackburn [accessed 5 May, 2022]; http://www.metamodernism.com [accessed 5 May, 2022].

basis for metamodern archaeologies (Heitz 2023b). Even though they are rooted in very different schools of thought, these attempts are united by the fact that they overcome the separation of body and mind as well as object and subject that are characteristic for both modernity and postmodernity. Of these, I would like to pick out two very different approaches here and briefly address them below – without, however, having the space here to outline them in all detail: Pierre Bourdieu's relational realism and praxeology (*praxéologie*) (Bourdieu 2009; 2013; Bourdieu and Wacquant 2013) as an epistemology of reflexive anthropology and Karen Barad's (2012; 2007) agential realism, which is at once an epistemology and an ontology through the relational conceptualisation of material-discursive affordances, for which Karen Barad uses the term ethico-onto-epistemology.

Pierre Bourdieu's praxeology and reflexive anthropology

With regard to the change that has led to the science and digital turn, the combination and integration of qualitative and quantitative as well as natural science and humanities methods into methodological approaches would be one of the central desiderata of metamodern archaeology. In the social sciences, such research designs are already being used and discussed under the name of mixed method research, as are the ontological assumptions and epistemological solutions required for such an enterprise (Creswell and Plano Clark 2010; Sommer Harrits 2011; Fries 2009). One approach that can be made useful for archaeology in this regard is Pierre Bourdieu's 'reflexive anthropology' with the epistemology he elaborated, the 'praxeology' (Bourdieu and Wacquant 2013; cf. Heitz 2018, 75-91, 109-130).

Pierre Bourdieu's work, from ontology to epistemology, social theory and methodology, forms a coherent and consistent basis, that, in my opinion, is particularly suitable to be appropriated in archaeological research. His theory of social practice and in particular its core, the habitus theorem, offers a social theoretical approach with which human-thing relations can be conceptualised relationally, even if it emphasises more strongly the rationality between subject and social group or social structures compared to approaches of new materialism (for example, Ingold 2007; 2013; Bourdieu 2007; 2009; 2014). The potential of his social theory for archaeology has already been demonstrated several times (*e.g.* Ballmer 2010; Barrett 2005; Bartholdy 2010; Dammers 2009; Dietler and Herbich 1998; Heitz 2017b; Kadrow and Müller 2019; Pfrommer 2009; Schreg *et al.* 2013; Shanks 2005). Pierre Bourdieu's epistemology, praxeology, as part of his reflexive anthropology, however, has so far remained rather unnoticed in archaeology (Bourdieu 2004; Bourdieu and Waquant 2013). Praxeology offers a way to overcome the dualism between objectivism and subjectivism by understanding them as different modes of knowledge production, while at the same time the combination of qualitative and quantitative methods is ontologically and epistemologically founded. Furthermore, his approach calls for the need to critically reflect on our time-bound and research milieu-influenced perspectives and can be used to develop a 'reflexive archaeology' (Heitz 2018, 113-115).

In his non-Cartesian ontology of the human being, Pierre Bourdieu understands body and mind not as two separate entities but conceptualises them relationally. His understanding of the human-world relationship goes back to the mathematician, physicist, and philosopher Blaise Pascal, but also to the phenomenologists Martin Heidegger and Maurice Merleau-Ponty (Bourdieu and Wac-

quant 2013, 161; Bourdieu and Chartier 1989, 54). He uses Blaise Pascal's phrase "*Le monde me comprend, mais je le comprends"* (Bourdieu and Wacquant 2013, 161), which can be translated as "I am contained in the world, but the world is also contained in me". Pierre Bourdieu refers with this to the relationality in human-world-relations and thus a flat ontology.

Following Pierre Bourdieu, human beings are part of the world in two interrelated ways: On the one hand, our perspectives are subjective, for we initially perceive and understand from the world what we have learned to perceive and understand through our life history. On the other hand, he argues, with our *physis* we are thus a part of the material, object-like world and thus measurable and countable like other things in the physical world (Bourdieu and Chartier 1989, 54). However, as we live in a particular time and place, we are confronted with certain environmental, economic, social, cultural, and material situations that we simultaneously structure in turn. This world of experiences is incorporated into our bodies over the course of our lives (Bourdieu and Wacquant 2013, 161; Bourdieu 2009, 199). The perceptual thought and action schemata thus incorporated during our lives, which guide our feelings, inclinations and aversions, our ideas of what is good and right, in other words, our whole way of thinking and acting (Fuchs-Heinritz and König 2014, 94-95) are structured by the material and social environment, but also structure it in return though our actions and practices. Pierre Bourdieu introduced the concept of 'habitus' to describe this mutual relation. The different forms of habitus shared in a certain social group are systems of permanent dispositions, referred to as 'structured and structuring structures' (Bourdieu 2009, 165; Wacquant 2013, 39-40; Bourdieu and Wacquant 2013, 161).

According to Pierre Bourdieu's ontology of the human-world-relation, things are always experienced physically, cognitively, subjectively and objectified at the same time. These aspects are not to be seen as separate in his ontology. Rather, they are related to each other through 'being-in-the-world', that is following Pierre Bourdieu simultaneously as subjects and objects (Bourdieu 2014, 246-247; Grenfell 2014, 9). Knowledge about the world thus always results from a double, twofold relation to the world, both in everyday life and in research practice. Things like archaeological finds can be experienced subjectively, but at the same time they can also be measured and counted in an objectified manner. Pierre Bourdieu has emphasised that subjective and an objectified perspective on the research topic cannot be clearly separated, just as cognitive and physical experience of the world cannot. He therefore understands subjectivity and objectivity not as two mutually logically exclusive epistemological positions, but rather as different modes and phases in one and the same praxeological process of knowledge production (Bourdieu 2014, 246-247). Accordingly, his praxeology offers a third way, in which relational thinking is preferred over dualisms: As individuals and society constitute each other, so body and mind, object and subject, objectivism and subjectivism are mutually related (Bourdieu and Wacquant 2013, 12, 19).

By 'subjectivism', Pierre Bourdieu means research attitudes whose possibilities of gaining knowledge are predominantly of qualitative and subjective nature. However, what remains barely accessible by taking a subjectivist perspective only is what he calls 'objective structures', that is, everything that transcends the perspective of a subject (Bourdieu 2009, 147; 2014). He refers to scientific forms of knowledge production that grasp the world in an objectified way, addressing, for example, quantitative methods (Wacquant 2013, 25-26). These might include computer-based analysis and simulation methods that exceed the capacity of human

cognition or expand it. However, objectified research perspectives bear the danger of imperceptibly exaggerating the recognised 'objective structures' to 'truths' – but which are, after all, only abstracted models of and simultaneously within reality (Bourdieu 2014, 75). Through praxeology, objectivism and subjectivism are placed in a relational complementary relationship, as only both modes taken together can capture the human-world relation. They are only heuristically separable in the research process, but always connected in being human. Because Pierre Bourdieu understands both as different phases in the research process, between which it is necessary to oscillate, his praxeology offers one of the possible ontological and epistemological third ways for metamodern archaeology.

Karen Barad's ethico-onto-epistem-ology and the ontological turn

New ways, which can be made useful for metamodern archaeology, also result from the ontological turn that is at the core of some approaches of the new materialism. That shift offers a way to combine an idealistic and a realist stance without giving up one position in favour of the other – or vice versa. In his essay 'Archaeologies of Ontology', the archaeologist Daniel Alberti (2016) argues that the new materialism spurred a new 'metaphysical archaeology'[5] after ontological questions had previously been reduced to epistemological ones with idealist-constructivist positions of post-processual stances of postmodernism (Alberti 2016, 164, 165). The archaeological theorists of the new materialism are concerned with a renewed search for the answer to the question of what things, or rather, the foundations of this world more generally are and how they come into being (Olsen 2010; 2012; Olsen and Witmore 2015, 189). Important impulses in this regard came from the feminist theory discussion (Butler 1993; Strathern 1988; Haraway 2008), where post-humanist concepts of body and identity are addressed. There are also conceptual references to the 'new ontological realism' in philosophy (Gabriel 2018, 10). In the thought of this new metaphysics in archaeology, relational processes beyond the Cartesian separation of body and mind are assumed to be the foundations of the world and not disparate entities that were formerly understood as building blocks of reality.

The physicist and philosopher Karan Barad, who proposes an 'agential realism', assumes by adopting a relational ontology that an object does not have properties in and of itself. Rather every form of existence is in relation to further existences, constituting their emergent properties (Barad 1996; 2007). The existence of every object, every quality and every state of affairs is conditional. Therefore, statements are only ever possible as statements about relations. Relations and '*relata*' – objects – are continuously formed, holding the same ontological status, *i.e.*, being equally real while no priority is given to one over the other. In short: *relata* do not precede relations. This also includes human beings. Karan Barad proposes in contrast to 'interactions', which are a metaphor to describe the connection of assumable entities existing in advance, the term 'intra-actions'. She holds that a relation does not refer to an existing object or entity, but the latter attain determinacy in intra-action, as intra-actions configure their boundaries and properties. Intra-actions thus create entities by turning an indeterminacy of the

5 In anthropology, the ontological turn is about disrupting the representationalist framework in which cultures are treated as belief systems offering different perspectives on a single world, with the respective native ontologies conceived as many different worlds (Paleček and Risjord 2012).

world-in-becoming into a determinacy and delimitability of things (Barad 2012, 19-22; Schreiber 2018, 106). Or as Karan Barad puts it:

> *"The term 'intra-action' signifies the mutual constitution of relata within phenomena (in contrast to 'interaction', which assumes the prior existence of distinct entities)" (Barad 2007, 429, footnote 14).*

In consequence, Karen Barad claims with reference to physics as a science that there is no inherent separation between the observed object and the activities (agencies) of observation – as long as a certain configuration of, *e.g.*, an experimental situation does not establish such a configuration in the first place (see also Scholz 2018, 127):

> *"The boundary between the 'object of observation' and the 'agencies of observation' is determinate in the absence of a specific physical arrangement of the apparatus. What constitutes the object of observation and what constitutes the agencies of observation are determinable only on the condition that the measurement apparatus is specified. The apparatus enacts a cut delineating the object from the agencies of observation" (Barad 2007, 114).*

The core argument here is that observations do not refer to properties of observation-independent objects since they do not pre-exist as such. With the ontoepistemology she proposes, Karen Barad does not represent classic realism of modernism, since she does not assume per se real existing entities, but emphasises their contexts of formation. With her agential realism, she wants to say something about the nature of causal relations between "discursive practices and material phenomena" (Barad 2007, 34). What is at stake is the nature of reality as such, not human experience, or human understandings of the world (Barad 2007, 160). In agential realism, epistemic questions about what we can know are positioned not only at the level of what we are capable of discovering, but simultaneously at the ontological level of existence prior to any measurement. If the process of knowledge production at the level of the properties to be known affects the outcome, any gain in knowledge is not an approximation to a truth, but a co-creation of it. Thus, we cannot pose from an observational external position to gain knowledge about the world, since we stand as part of it (Barad 2007, 341). Questions concerning being are inseparable from questions concerning knowing, because knowing co-determines being. Or, as Karen Barad puts it:

> *"According to agential realism, knowing, thinking, measuring, theorizing, and observing are material practices of intra-acting within and as part of the world" (Barad 2007, 90).*

As part of the larger configuration of the world, human beings in Karen Barad's approach may well play a role in what form further materialisations of the world take. In such 'agential cuts', what we delimit as humans may well be involved in some cases in bringing about further materialisations, for instance, in the course of arranging experimental conditions or through social practices. In other cases, however, materialisations of the world occur without human influence. Humans, among these other configurations, have no particular role in the production of the world in Karen Barad's agential realism (Barad 2007, 341). Karen Barad's thought is clearly set apart from constructivist theories that recognise humans as reality-constructing entities, like the following quote shows:

> *"In an agential realist account, discursive practices are not human-based activities but specific material (re)configurings of the world through which boundaries, properties, and meanings are differentially enacted" (Barad 2007, 183).*

Overall, Karen Barad, as well as other scholars of the new realism, is concerned with a fundamentally flat ontology consisting exclusively of unique, singular, contingent categories of being that differ in spatiotemporal dimension because of their materialisation, qualities, and dynamics, but not in ontological status (DeLanda 2004, 58; cf. Witmore 2014; Alberti 2016, 168). With the dissolution of boundaries between the world of ideas and things, a clear separation between being and knowing, that is, epistemology and ontology, and subjectivity and objectivity, also becomes impossible, as Daniel Alberti sums up:

> *"In summary, being neither naturalism nor constructivism, ontological realism claims that objectivity and truth may be contingent but are nonetheless demonstrable and robust" (Alberti 2016, 169).*

Karen Barad explicitly addresses the issue of ontology and epistemology and proposes her 'ethico-onto-epistem-ology' instead (Barad 2007, 90). With that, she emphasises the inseparability of ethics, ontology, and epistemology in knowledge production, in scientific practices, and in the world itself and the humans and non-humans involved in it, which co-constitute the world intra-actively. The separation between the two standpoints, realism and constructivist idealism, becomes obsolete, as is the separation into objects and subjects by the contingency of relationality (Barad 2007, 123).

Yvonne Marshall and Benjamin Alberti (2014) appropriated Karen Barad's argumentation for an archaeological example: the categories of sex and gender, for example, would not be mutually exclusive, but would emerge through the repetition of certain material-discursive practices, both of which are equally real (Alberti 2016, 169). Another example of Karen Barad's appropriation of agential realism in combination with actor-network theory and the assemblage theorem is Stefan Schreiber's (2018) qualitative study of the material and symbolic relational assemblages of 'Roman imports' in the 'Middle German Barbaricum'. The latter are described as assemblages and, by revealing agential cuts, their constantly changing material-discursive relational assemblages in the past are under investigation as well in the present. In the future, it would certainly be interesting to further explore philosophical approaches, such as that of Karen Barad, for their potential for metamodern archaeology.

Discourses of metamodernities

The experience of our time seems to be accompanied by global challenges and subjectively experienced health, climatic, ecological, social, political and economic crises. The associated social transformations are accompanied by philosophical, scientific and art-theoretical debates about corresponding approaches to solutions. In these debates, topics are once again being discussed that received little attention during postmodernism with its idealistic-constructivist approaches, such as reality, truth and factuality, the relationship of the virtual to the material, and the boundary between the human and the non-human. Signs of these transformations in the humanities and social sciences, as well as in archaeology, are the science, digital, material and ontological turns and the accompanying transfor-

mations in knowledge production. All these changes indicate, in my opinion, that not only archaeology, but also our lifeworlds are in a period of transition that will possibly lead epochally beyond postmodernity and could be described as metamodernity. Metamodern archaeologies are characterised by oscillating or synthetically combining different research attitudes that go back to discourses of earlier modernities, such as modernity and postmodernity. Contradictions are thereby overcome by epistemologies or onto-epistemologies of third ways that mediate between idealism and realism, and between subjectivist and objectivist perspectives and thus move beyond the ontological Cartesian body-mind dualism.

However, positions close to realism as well as idealism are likely to continue to coexist in parallel within the archaeological communities of research practices, or even within individual research projects or the perspective of individual researchers. This form of oscillation is also likely to be a hallmark of metamodernity. Metamodernity might also mean for archaeology to discover new scales of reflexivity that include the research practices as such, acknowledge the researchers themselves as a constitutive part of knowledge production and understand knowledge as material-discursive configurations in this world. The oscillation between viewpoints, the synthesis of perspectives, and the possibilities of combining methods to investigate the dynamics of materialisations and dematerialisations as well as stabilisations and destabilisations in time is what might lead archaeology beyond postmodernism.

Accordingly, I agree with the authors of the introductory "Opening Words" (Arponen *et al.* in this volume) that modernity – with its many forms of temporally parallel and successive modernities – "is characterised by the promise of the method of reason and systematic reflection rather than by doctrine" and that the "project of modernity is never fulfilled" and "remains open" (Arponen *et al.* in this volume). It is likely that it first and foremost represents an amplified reflexivity on the plurality of modernities, their referential references, and their different configurations is what constitutes the archaeology of metamodernity.

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Analogical Reasoning and the New Materialism: Reactions to *Discourses on Modernity*

Jerimy J. Cunningham

Introduction

The "Opening Words" of this volume seek to stimulate a conversation about the way archaeology has been sculpted by modernity (Arponen *et al*. this volume). The authors note that for them modernity appears most prominently with the beginnings of "modern" philosophy in the works of David Hume, John Locke and Immanuel Kant, which lead to a turn away from religiosity and toward empiricism and a greater appreciation of the natural world. In the hands of Enlightenment scholars, these ideas generated greater concerns with human dignity and equality, a focus on progress over degeneration, and the emergence of free market economies and representative governance. It is no wonder that Victorian scholars saw the rationalism at the core of modernity as an expression of humanity's greatest accomplishment – a firm break with the feudal orders and superstitions it replaced. At the same time, however, these changes also invited a series of lasting critiques, often tied to the sense that Enlightenment ideals were less an expression of universal human achievement than an ideology imposed by Napoleon's bayonets. German romantic resistance valued the past over progress and introduced the concept of *kultur* from Johann Herder to stress how linguistic communities related to local environments (see Pagden 1993, 177). British interests in progress pivoted from Jacobinism to emphasise Jeremy Bentham's utilitarianism, which refocused

definitions of rationalism to the greatest happiness for the greatest number of people. Utilitarianism eventually became the basis for a new understanding of civilisation that saw rational self-interest as the motor of progress. By the close of the 19th century, this utilitarian-inspired understanding of how humans achieved modernity induced well-known counter positions from Marx and Engels, Émile Durkheim, and the young Franz Boas. Archaeology emerged in this fertile stew of 19th century thought (Stocking 1987; Trigger 2006). As the opening words attest, archaeology demonstrates commitments to empiricism, reductionism, and naturalism, but it has also explored well-trodden countercurrents focused on idealism, historicism and various expressions of holism.

I focus below on one specific legacy of modernity that is shared by most, if not all, branches of contemporary archaeology. It is the belief that 19th century changes mark an epochal transformation to modernity from the traditional world that both preceded it and that continued to exist beyond its areas of greatest impact. Modernity thus represents a fundamental break with the past that produced new forms of subjectivity in the North Atlantic region. Those that did not experience these transformations remained "out of time" (following Fabian 1983). Archaeology's origins within modernity produced an interpretive quandary: how could archaeologists who embodied modern subjectivities understand the pre-modern lifeways that created the archaeological record? The solution was to seek out coeval "traditional" people who seemingly offered analogical baselines for archaeological interpretations, and so ethnoarchaeology was born as part of archaeology's epistemic strategy. The ambiguities and criticisms that so often plague ethnoarchaeology (*e.g.* Gosselain 2016; Lyons and David 2019) are thus a consequence of the way modernity gave global cultural variability a temporal dimension. In what follows, I address critiques of ethnoarchaeology by proposing that we excise this temporality from its mandate. Instead, I suggest that we redefine it as a form of standpoint analysis associated with a more general – *i.e.* less categorically ethnographic – approach to analogical reasoning. I conclude by showing how ethnoarchaeological knowledge creates new interpretive options in recent symmetrical archaeologies.

What is modernity?

My answer to the question: "What is modernity?" emerges in part from trying to make sense of ethnoarchaeology and its various roles in archaeology (Cunningham 2003; 2009a; Cunningham and MacEachern 2016). Modernity's impact on archaeology certainly begins in the post-Renaissance thought identified in the introductory "Opening Words" contribution of this volume, but the way it impacts ethnoarchaeology is specifically how it created a set of widely accepted understandings about global cultural variation. Archaeologists and anthropologists experience modernity as an extension of the domination of capitalism after the 1860s, which is when many contemporary academic disciplines were established (*e.g.* Stocking 1987). Hence, I follow others (*e.g.* Harvey 1990; Jameson 1991; cf. Taylor 1999; Wood 1997) in seeing modernity primarily as the ideology of capitalism. Its impact on the disciplines of anthropology and archaeology has been the way it defined scholars as moderns and thus created the interpretive challenge of studying, respectively, the non-modern cultures in the global periphery or the non-modern lifeways represented in the archaeological record.

Modernity's importance to archaeology thus emerges as utilitarianism became the widespread basis of politics, economics, and science. The core ideas and some of

the socio-political structures that enabled this shift are certainly visible much earlier. However, modernity's significance for archaeology is most felt when the consolidated power of the middle classes, combined with a sense of their own progressive trajectory, crashes head-on into the Darwinian Evolutionary Theory that gave their historical sensibilities a foundation in nature (Bowler 1992; Trigger 1998). By the middle of the 19th century, idealism, creationism and the power of the monarchy were being supplanted by progressivist metaphors and a new approach to time that gives modernity its name. The utilitarianism of Jeremy Bentham and John Stuart Mill were at the core of this transition. It suggested human rationality should be defined as the maximisation of long-term happiness by delaying the gratification of base desires. The key characteristics of modernity listed in the "Opening Words" – the rule of law, personal rights, private life, and democracy – reflect attributes of a society reorganised around utilitarianist principals.

As part of this transition, global cultural variability was redefined as the differential expression of a culture's ability to deploy this rationality. Middle class male industrialists and their investment decisions were believed to be its living essence (Stocking 1987, 35). In contrast, the urban industrial poor, "Celtic fringe", women, and non-Europeans were too governed by their passions to participate fully in modernity's various institutions. The equation of culture with time organised societies into typologies according to their ability to progress. Whereas medieval and Renaissance thought often treated cultural difference as a function of the differential rates of degeneration caused by post-Deluge wanderings (Hodgen 1964, 254-269), by the late 19th century, scholars were systematically viewing other cultures as anachronisms out of step with the progress of civilisation. As such, they served as representatives of earlier stages of cultural development that cultures better able to deploy rationality, and limit their passions, had already passed through.

Anthropology emerged at this moment, best defined perhaps in the classic evolutionary approaches of John Lubbock, Lewis Henry Morgan and Edward Tylor. By World War One, Franz Boas (*e.g.* 1911) and his students soon were explicitly rejecting classical evolutionism's evolutionary ladders and the racialism it inspired at the close of the 19th century. Yet, this did little to undercut the temporalisation of cultural variation in anthropology. From the beginnings of the discipline, the object of anthropology has been precisely those cultures assumed to have escaped capitalism, either by virtue of their "isolation" (one of anthropology's core tropes) or because their "traditional nature" made their cultures resistant to change even in the face of contact and colonial interventions. Various terms have been used to frame this distinction ("premodern", "pre-capitalist", "rural", "peasant", "traditional" "underdeveloped"), but throughout, anthropology's job has been to study those who are specifically "out of time" (Fabian 1983; see also Ferguson 2005; Trouillot 1991). One could perhaps suggest that there would have been no reason for anthropology were it not for modernity and its particular approach to culture and time.

The secondary impact of modernity on anthropology in the 20th century has been to define a series of debates between theoretical schools based in contrasting romanticist and rationalist perspectives. Anthropological analyses, from Boasianism and Geertz to more recent postmodernist thought, have skewed romantic. They tended to celebrate cultural practices as alternatives to the immiseration and devastation caused by capitalism. In doing so, they often selected research themes that drew explicit contrasts to modernity. Studies of kinship systems, gifting, subsistence level production, ecological embeddedness, and gender challenged the

taken for granted power of nation states, universality of commodity economies, inevitability of ecological degradation, or naturalness of patriarchy. Culture and the production of meaning were the sources of human practice. Rationalist tendencies, such as the mid-century neo-evolutionary approaches of Julian Steward, Leslie White, and Marvin Harris, view social change as human adaptations to the affordances of nature. They thus demonstrated faith in the ability of humans to know and manipulate the world. A similar rationalist focus is behind anthropological interests in political economy, which often stressed how diverse interests lead to praxis and local and global forms of social inequality. The point is that modernity thus has not only created an object for anthropologists to study, but has also defined the primary axes around which debates were organised.

Modernist thought has also made archaeology and anthropology allied disciplines. Their similarity emerges from the fact they share a common object: archaeologists study societies that predated modernity, while anthropologists study coeval anachronisms. This common focus on "pre-modern" societies (whether ancient or vestigial) resulted in their organisation into the same discipline in the Americas and their theorising has generally mirrored one another. Rationalist approaches in archaeology derived somewhat directly from neo-evolutionary approaches in anthropology. New Archaeologists believed that both archaeologists and their subjects had an ever-increasing ability to know and control the natural world. They adopted a system-based approach to human behaviour that saw ancient cultures progressively adapt to ecological opportunities. As Trigger (1998, 124-125) notes, this belief in the power of rationalism seems to originate in American post-war optimism, while its systems-focus derived from mid-century corporate capitalism where change did not come from the individual insights typical of 19th century evolutionism, but rather from the emergent qualities of a corporate organisation. New Archaeologists also saw themselves as rational beings, and thus they adopted an epistemology where individuals mattered less to knowledge creation than methodologies that implemented systematic testing regimes (also see Hodder 1985, 20-21).

The romantic reaction came in the form of post-processual archaeology that saw ancient cultures to be distinct systems of meaning that owed much to the Durkheimian tradition and then Weber's impact on Geertz's later interpretive anthropology. Research tended to reconstruct cognitive patterns as structures or texts and traced their continuities through material patterns. Its methodology drew from R.G. Collingwood to look for correspondences among diverse data sets that reflected systems of meaning (Hodder 1999). Rather than doggedly pursuing historical accuracy (which was considered unattainable), post-processuralists embraced underdetermination theses and varying degrees of relativism to suggest that the ultimate objective of archaeology was to produce innovative readings of the material record. This flight from rationalism emerged in the late 70s through mid-80s when organised labour had collapsed and progress seemed to produce little more than environmental devastation and a concentration of wealth among the few (Trigger 1998, 141ff.). The turn to the study of meaning and culture was a typical postmodernist reaction to rationalism's failure to produce progress or global prosperity.

Far from the "dead horses" mentioned in the "Opening Words" of this volume, we might view New Archaeology and post-processualism as particularly incandescent examples of how archaeologists have reacted to modernity. Moreover, they continue to inspire trends in the discipline. The rationalist emphasis of processualism influences many archaeologies in the Americas, albeit in a softer form

(Hegmon 2003). It exists in the core of the CRM industry's methodological standards and is the basis of big science research programs focused on networks and resilience. Post-processualism's fixation on meaning, cultural conservativism, and relativism likewise lies at the foundation of new alternative and Indigenous archaeologies (Bruchac *et al.* 2010), as well as the epistemic ambivalence visible in symmetrical archaeology. While few archaeologists might see themselves now as processualists or post-processuralists, the debates between these once iconic positions still define the theoretical field in which archaeologists work.

Ethnoarchaeology, analogy and time

My attentiveness to the way modernity has temporalised cultural variation has come from my own struggles to understand debates surrounding ethnoarchaeology (Cunningham 2009a; 2013). Ethnoarchaeology is generally considered to be a subfield that bridges archaeological and anthropological approaches. The most palatable definition casts ethnoarchaeology as a form of ethnographic inquiry that studies contemporary cultural variability to learn about the actions that created the archaeological record. In practice, it tends to begin with an interest in some pre-modern cultural practice identified through the archaeological record and then uses the ethnographic approaches to look for similar practices in "traditional" coeval cultures. Ethnoarchaeological research makes explicit the common non-modern object shared by anthropology and archaeology, and thus it unveils the temporal landscape that capitalism produced. The presence of some form of ethnoarchaeology in most archaeological traditions (*e.g.* Binford 1981; Hodder 1982; Politis 2015; contributions to Marciniak and Yalman 2013) shows that the temporal equivalence of ancient and other is baked into the very fabric of the discipline.

Critiques of ethnoarchaeology have often noted this temporalisation (*e.g.* Hodder 1986; Meskell 2005), but they tend to misdiagnose ethnoarchaeology as the source of the problem rather than just its most obvious symptom. This has allowed modernity's influence on archaeology to go largely unaddressed (cf. Thomas 2004). One of the most strident recent critiques has even argued that ethnoarchaeology should be killed off as a form of inquiry because it (rather than anthropology, archaeology, or even modernity itself) is believed to rely on evolutionary tropes (Gosselain 2016). It should be obvious that eliminating ethnoarchaeology will do very little because the problem runs much deeper than the work of a modest subfield. The division of cultural variability into a continuum running from the modern to the traditional is nothing less than a foundational metaphor of our age.

How can archaeology then deal with the impact that modernity has on its work? This issue remains significant because archaeologists tend to write histories about societies that predate capitalism, but do so within a world thoroughly transformed by capitalism. This alone means that archaeology must find ways to address the "tyranny" modernist assumptions impose on their interpretive frameworks (following Wobst 1978). Archaeology is still predominantly practiced by members of the North Atlantic middle class (Ribeiro and Giamakis 2023), which also gives the discipline a breadth of background knowledge much less diverse than the pasts it hopes to convert into history. Ethnoarchaeological work – albeit with a much broader mandate – could be crucial to archaeological strategies that hope to move beyond the interpretive limitations that archaeologists possess.

Doing so requires us to distinguish between ethnoarchaeology's general role in archaeology's epistemology and the way its work historically has been co-opted

by temporalisations of cultural variability. In its most general form, ethnoarchaeology is a strategy for making better analogical interpretations. While the assumption is that analogies in archaeology are usually "ethnographic" (see Currie 2016), this need not be true. Early critiques of positivism by philosophers of science (*e.g.* Hesse 1966; see Montuschi 2000) proposed that all interpretations are in effect analogical because they explain new empirical settings using models drawn from previous case studies. Cognitive scientists likewise have suggested that metaphoric associations are inherent to human knowledge systems (*e.g.* Lakoff 2014). These metaphoric associations become increasingly scientific as an initial (metaphor-based or abductive) explanation is converted into a formal model that might be tested systematically against new case studies. Models are formalised through additional conceptual or empirical work that identifies the structures and/or causal systems at the core of the model. Once elaborated, the models become the basis for new interpretations, and the degree to which researchers believe that a model explains some new setting relies on analogical testing strategies.

The standard definition of how analogical interpretations work emphasises the point where a model is used to interpret a case study (see Holyoak 2005 for an overview). The model acts as the "source-side" of the analogy, reflecting a well-known and comparatively secure set of interpretive proposals (a model), while the new and lesser-known case study under investigation is the "subject side" of the analogy (after Hesse 1966; Watson 1979; Wylie 1985). While one could draw analogical comparisons based simply on the presence of a few similar attributes in two settings (so-called "simple analogy"), stronger "relational analogies" propose that a causal or structural system – *i.e.* a determining structure – produced the similarities noted between the model and the case study. Interpretation begins by itemising similarities (positive analogies) and dissimilarities (negative analogies) between the model and the case study to assess the likelihood that the causal/structural system was responsible for patterning in both settings. Researchers then test the model by hypothesising about the additional similarities or dissimilarities that should be present in the case study if the determining structures proposed by the model produced the observed pattern. In other words, they seek to convert elements of "neutral analogy" (attributes with unknown relevance) into either additional positive or negative analogies. These new lines of evidence might lend additional support to the interpretation by showing that further attributes expected by the model were discovered to be present in the case, they might undermine the case by revealing lines of evidence that contradict the expectations of the model and instead might suggest an alternative explanation, or they show that the model explains part of the case but additional models are needed to account for other parts of the observed pattern (Shelley 1999). Each of these subject-side tests – whether supportive, negative or limiting – provides information that shows how thoroughly the model explains the case. It also creates feedback because each application of the model to a case study provides information on the scope and limitations of the determining structures, which refines the model.

This somewhat austere outline of analogical interpretation should sound vaguely familiar to archaeologists because it has often been implicit in discussions of archaeological epistemology. For instance, processualists sought independent lines of evidence for their deductive tests (Binford 1968; Binford and Sabloff 1982), post-processuralists sought correspondence and coherence among diverse datasets (Hodder 1999), and recent advocates for "inference to the best explanation" call for the testing of multiple ("source-side") models against distinct lines of ar-

chaeological evidence to assess which one best accounts for an archaeological case study (Fogelin 2007). Where the philosophical definition of analogy differs from archaeology lays in the way it understands the source of analogical models and, consequently, the role that ethnoarchaeology should play in interpretation. Archaeologists have tended to see ethnoarchaeology as the primary source for analogies: ethnographic research among traditional peoples creates models that become the basis for analogical inferences about patterns in the archaeological record (see Cunningham 2003). Philosophical and cognitive science understandings see analogy as a component of all types of interpretations, and thus they carry no such rider about where analogies should come from.

How then might we understand ethnoarchaeology if its role is not to study coeval "premodern" peoples to act as parallels for ancient societies? Writing for philosophical audiences, Alison Wylie (1989, 9ff.) has characterised ethnoarchaeology as a "source-side strategy" and a "supplementary tack" for improving the models that are used in analogical interpretations. Rather than *the* source of analogies, it works alongside critical/reflexive analysis and experimental studies that assess the structures or causal systems archaeologists use to interpret the past (see Cunningham 2003). What makes ethnoarchaeology unique among this collection of source-side strategies is the way it uses ethnographic engagements as part of its assessment. Ethnoarchaeology's potency as a reflexive strategy comes from the two ways it changes the contexts in which archaeological models are assessed (Cunningham 2009a; following Wylie 1989). First, it assesses archaeology's explanatory models in ethnographic settings that represent much shorter *durées* than archaeologists typically have access to. This typically means that expectations of the archaeological model need to be made explicit and then adjusted to incorporate new linking theories that address the different forms of evidence available in an ethnographic setting, which reduces the potential for tautological findings.

Second, these models are assessed through explicit consultation with non-archaeological collaborators who hold different assumptions and might then offer contrasting interpretations. Both adjustments introduce forms of vertical and horizontal independence (see Wylie 2000) into the testing of archaeological models that go beyond what can be achieved only by testing models against archaeological data. Resituated in this way, ethnoarchaeology emerges as an important strategy for a postpositivist approach to archaeology that acknowledges that theory frames interpretation (underdetermination issues) and uses standpoint-based analyses and reflexive strategies to build stronger forms of objectivity that exploit disunities in scientific knowledge (after Harding 2004; *e.g.* Wylie 1992).

In short, ethnoarchaeology is an expression of humility. It exists because archaeologists know their interpretations of the past are based on assumptions they draw from their own experience, and thus they seek out people with other perspectives to try to expand their interpretive lens. As Nicolas David (1992) once suggested, ethnoarchaeology's primary role is expanding the "analogical consciousness" of archaeologists. Rephrased in the terms of feminist theory, ethnoarchaeology exposes the discipline's dominant interpretive models to different standpoints. Alison Wylie has argued that this type of exposure can be incredibly helpful to understanding how current standpoints limit interpretive options. The standpoints of "outsiders" to a particular discipline can alert scholars about unwarranted assumptions, introduce new explanatory hypotheses, reveal new forms of evidence, and introduce previously unidentifiable patterns in existing bodies of evidence (Wylie 2004). Ethnoarchaeology draws upon the strengths of outsider perspectives to assess and improve the

models that archaeologists use by focusing attention on the background assumptions that frame research. It is perhaps worth remembering that early ethnoarchaeological studies were in fact some of the first to challenge beliefs in a temporal landscape (see especially Wilmsen's [2019, 8ff.] retrospective).

Given this expanded understanding, ethnoarchaeology's current predicament might be seen primarily as a problem caused by the way archaeologists have identified their dominant interpretive standpoint. Put bluntly, archaeologists have believed that capitalism's "great transformation" (*sensa* Polanyi 1957 [1944]) created such a rupture in human subjectivities that archaeologists now are defined primarily by their modernity. Of course, not all archaeologists necessarily agree. The other option has always been to assume that the utilitarianism at the core of capitalism is a human universal, and hence no rupture occurred. Optimal foraging theories and definitions of archaeological cultures that treat them like primaeval nation states see ancient lives as examples of capitalism's core dynamics. But for those who accept the rupture, modernity creates both the problem and a solution: archaeologists who worry that modernity limits their interpretive creativity "expand their analogical consciousness" by conducting ethnoarchaeological research in the eddies and backwaters of the world system where they believe pre-capitalist logics survive.

Ethnoarchaeology and the future

Ethnoarchaeology needs, then, to define for itself a role more clearly seen as a source-side strategy in archaeology's general reliance on analogical reasoning. To my mind, two adjustments are needed to make this change explicit. First, ethnoarchaeology should work from a more nuanced understanding of how standpoint identities impact archaeological interpretations. Histories of the discipline show that archaeological interpretations have often reified specific socio-political and historical factors that defined the settings where archaeology was being conducted (Trigger 1984; 2006). Source-side ethnoarchaeological work needs to go beyond the catch-all of "modernity" to ask specific questions about how intersectional positions based on nationality, class, identity, and gender (among others) impact interpretive tendencies at a particular moment. It seems obvious that any discipline that aspires to write the global history of the species should ensure that its analogical baselines are anchored in understandings of the entirety of the contemporary human experience, rather than just the anxieties of those lucky enough to be its professional practitioners (Cunningham and MacEachern 2016).

Second, this more nuanced approach to understanding the standpoints that currently enable archaeological knowledge unveils a diverse range of social settings within modernity where one might do ethnoarchaeological research to expand analogical consciousness. Anthropologists – who have always been their own worst critics – stress now that ethnographic work takes place *in modernity* and what anthropologists have always studied is the *vernacular nature of modernity* produced by the undulating landscapes of global capitalism (see Knauft 2002; Miller 1997). The global cultural diversity we currently see is the result of the ways antecedent cultural traditions were imbued by the heterogeneous forces of capitalism as it expanded and adapted over the past 400 years. The integration of the world invited local actions that often radically transformed these societies (Wolf 1982), and in some cases, it produced entirely new cultural "traditions" (*e.g.* Piot 1999). The cultural diversity visible in human societies – not just between dif-

ferent regions of the world, but often within the very same communities – emerges from the different locations people occupy in the local political economies of modernity. Ethnoarchaeologists might find the contrasting experiences needed to assess archaeological models in locations very near at hand.

What would such an ethnoarchaeology look like? Ethnoarchaeological fieldwork might be largely the same as other ethnographic research programs, but how research collaborators are selected would change. Rather than focusing on evolutionary parallels or deep time cultural continuities between ancients and others, the key dialectic in the analysis would be between archaeological models and standpoint positions with the potential to expand interpretive options. This is not to say that archaeologists should cease collaborative work with indigenous and descendent communities. However, such collaborative archaeologies should be undertaken to address the emancipatory objectives of key stakeholders, not because descendent communities are living fossils whose current lifeways are parallels to ancient life. Ethnoarchaeology's point of departure is thus through a reassessment of the interpretive trends present in the discipline, and a search for communities whose lifeways *within modernity* provide the critical distance needed to reveal operating assumptions and expand the range of interpretive options.

Posthuman ethnoarchaeology

By way of an example, I conclude my discussion with a brief example of how a recent interpretive trend in the discipline could benefit from the addition of ethnoarchaeological work. Posthumanist perspectives have become increasingly popular in archaeology over the last 20 years, and these have generated real excitement. I have used variants of posthumanist thought in my own analysis of the emergence of complexity at the site of Paquimé in Northern Mexico (*e.g.* Cunningham 2017). Devotees to this latest "brand" of post-processualism identify significant internal divisions within posthumanism that are easily lost on outsiders. While archaeological work has been influenced by Philippe Descola's (2013) ontological pluralism and Eduardo Viveiros de Castro's multinaturalism (see Alberti 2016), the posthuman turn is most notably rooted in calls for a "symmetrical archaeology" that combines variants of Bruno Latour's (2005) Actor Network Theory and Tim Ingold's (2012) work on ecology with the vital materialisms of Jane Bennett (2010). At the core is a belief that archaeological histories have been too human centred and thus they need to flatten their ontologies by including a wider range of non-human actors in their narratives.

I tend to identify strong and weak programs in this work. Strong program analyses aspire to a new metaphysics for the discipline (Alberti 2016, 165), often by rejecting a privileged position for human subjectivity and action (Olsen 2007, 586). On my reading, this often flirts to a provocative object-centred asymmetry that echoes the infrastructural determinism of Second International Marxism (a.k.a. the "old" materialism) and the "artifact physics" of cultural historical archaeology. Weak program symmetrical archaeology retains a concern with unique human qualities and then expands the analysis by focusing on how materiality mediates a huge range of human action (Webmoor 2007; Appadurai 2015). These are often described as an "archaeology of social ontologies" (Alberti 2016; Kohn 2015; Swenson 2014). Here, human agencies are understood as a basis of praxis, and then new understandings of assemblages and their vitality augment more conventional interests in social theory (Kohn 2015 322-323; Bennett 2010, 108).

Given our understanding of how historical settings defined cultural historical, processual and post-processural archaeologies, it seems worth it to ask why such *posthumanist* approaches to the past have appeared. What historical forces in modernity make posthuman models seem appropriate to studies of ancient life *now*? In many ways, this seems to reflect a sense in many disciplines that technologies have come to control human lives to an extent that unique forms of human praxis are increasingly ineffective. Jane Bennett's (2010) approach, for example, not only affirmed the independent life trajectories of vital non-humans but also proposed that the failure of human-made technologies such as the NE power grid could not be blamed on human policies or actions. Rosi Braidotti (*e.g.* 2019, 2) anchors her posthumanism in a post-postmodernism defined by the ruins of the Fourth Industrial Revolution and the Sixth Extinction. While she speaks of a potential for a posthuman praxis in the humanities, her subsequent discussions give few reasons for optimism. The context seems to be partially defined by the sense of powerlessness that academics and others feel at our current moment. Even when scholars make claims about various processes operating on our planet (think: climate change; vaccine efficacy) and are careful to avoid spurious fast science conclusions, government officials may casually muzzle "inconvenient truths" and the public might opt to believe conspiratorial social media posts over peer-reviewed findings. Academics may legitimately feel that their lives are increasingly structured by bloodless corporate entities and other non-human agencies.

I do think posthuman perspectives offer some incredible insights about how humans are entangled with material culture, but they also introduce interpretive models that may be fundamentally inappropriate for many ancient settings. Archaeologists are charged with studying epochs defined by a wide range of ideologies and sentimentalities. Ancient lives – untroubled by software updates, AI, privacy clauses, Zoom meetings, lost hard drives, billionaire space programs, and pervasive electronic surveillance – were likely less defined by the "vital agencies" of their material infrastructures than most contemporary archaeologists. Yet, it has become difficult to even address such differences because symmetrical archaeologies have a palpable antipathy toward epistemology. The trend is not entirely unexpected: if posthumanists claim that too much attention has been focused on human cognition, symbolism, and language, and not enough on vital materiality, then epistemic questions that ask how *human minds* make knowledge of the world reintroduces the dualism they have worked hard to escape (see Arponen 2015). Yet, it is worth remembering that the central issue for many of those living in the impoverished spaces of our "posthuman" world remains their inability to get enough stuff, not a sense that their stuff is alive and controls their destiny. Archaeologists risk shirking their responsibilities as scholars when they rely on their standpoints as models to interpret pasts that may have been remarkably different than the present they experience.

We should then be concerned with epistemology, and a key part of archaeology's epistemic work should be ethnoarchaeological research aimed at broadening the discipline's interpretive options. If scholarly experiences have created posthumanist pessimism, we should seek out examples of people who have productively mobilised the power of materiality in their praxis. My ethnoarchaeological research in the Inland Niger Delta of Mali, for example, highlighted how Malian women used trousseau items to confront patriarchy (Cunningham 2009b). Trousseaus once included large collections of calabashes, but starting in the 1950s, women began replacing calabashes with imported enamel dishes. Women acquired enamels as presents from their mother, as gifts from their extended social network,

and from the income they generated during periods of migrant labour. People generally agreed during my fieldwork in the early 2000s that a large collection of enamels in a wedding trousseau was an incredibly important statement about a bride – they were a measure of her character and as such were displayed as an assemblage in the front room of the marital house. Yet, people understood the "value" of the assemblage in different ways: a collection might reflect the bride's eagerness for the responsivities of marriage, her ability to work hard, the size of her social network, or her family's wealth. The overt materiality of a collection made statements about a bride's character at a moment when social norms dictated restraint and obedience. These displays coincided with a precarious period in a young woman's life – usually just after she had moved into her husband's family and before children had survived infancy. Enamels in the trousseau were thus powerful allies in a bride's construction of her social being at a point in her life when she was otherwise powerless in the face of patriarchy. They demonstrate how materiality may be enlisted to pursue distinct human-initiated forms of praxis.

Conclusion

By now it is pure cliché to state that archaeologists make history in the present. The challenge more precisely is to write about the past in a way that does more than reify the ideologies of a particular moment. As that ideology, modernity identifies a historical rupture in human subjectivities that seems to create an interpretive challenge for "modern" archaeologists who seek to know "premodern" pasts. It then extends that rupture across a temporal landscape by framing contemporary cultural variability as a continuum from the modern to the non-modern. Finally, it states the solution to archaeology's interpretive challenge lays in ethnoarchaeological work that studies pre-modern "others" to find parallels for ancient settings. The first step in decontaminating our work thus lays in seeing this temporalised world as the ideology it is, and then refocusing our epistemology to confront its impact on our work through intersectional standpoint analyses that build from the diversity of *modern* life.

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Escaping Modernity with Modernity: Some Reactions to Reactions

V. P. J Arponen

Introduction

In his chapter in this volume, Jerimy Cunningham states that:

> *"Modernity's impact on archaeology certainly begins in the post-Renaissance thought identified in the introductory 'Opening Words' contribution of this volume, but the way it impacts ethnoarchaeology is specifically how it created a set of widely accepted understandings about global cultural variation" (Cunningham this volume, 56).*

From this, Cunningham enters into a discussion about the interpretative patterns that emerge from modernity as the ideology of capitalism. Cunningham points out, correctly, that anthropology and archaeology emerged as sciences precisely in the historical juncture in which the "spirit of capitalism", as referred to by the foundational sociologist Max Weber (1930), was transforming the world. Cunningham argues that the capitalist rationality driving and being reaffirmed in this transformation informed the interpretative mores of early anthropology that tended to divide between the enlightened and rational modern world and the somehow left-behind "traditional" and "primitive" societies encountered by expanding capitalism and its scientists, classically seen in which these two occupy different "stages" in evolutionary development, and so on.

It is easy to agree with Cunningham. However, the immediate challenge that follows is the one of replacing or otherwise reforming our interpretative mores shot through with capitalism, colonialism, and the like. I recall my doctoral father, the historian of science John Henry (2002), stating that Aristotelian metaphysics was able to dominate human thought until well into the Renaissance, not because the system was unproblematic, far from it, but because no equally comprehensive paradigm to replace it had been developed. I suspect that any attempts at reforming any widely accepted understandings will face the same challenge of having to provide a comprehensive alternative. This is also noted by Caroline Heitz (in this volume, 33) as she argues that we can observe a certain

> *"temporality of such scientific processes, which are not always programmatically controlled, but rather gain momentum over time".*

Moreover, something of an irony is that in our attempts to criticise and escape our biases, we still draw from the what arguably is best about the Enlightenment tradition, namely, to reflectively and analytically chart our interpretative options. In this reflective charting of the options, we can very much subscribe to the kind of qualities and guiding sensitivities identified by Cunningham, and indeed also Rachel Crellin (in this volume), such as "humility" of our inquiries and the incorporation of "other perspectives" or standpoints. We can also easily agree, with Crellin (in this volume, 26; following Julian Thomas 2004), that when we address "the alterity of the past [it] is an ethical move". That is to say, our views of the past must be seen as accountable for the kind of imagery of the past, and therefore the kind of present and future, that our scientific work creates. Why? Because, after all, at least some science is being read by the wider public, and through these channels it can inspire art, governance, and politics, and so, what is being conveyed by science affects, however, indirectly, the shaping of our lifeworlds.

A trickier question is, whether in our reform efforts, we will necessarily entertain one philosophy or another "that is built on universalising assumptions" that Crellin (in this volume) finds objectionable. We can see a number of facets to this question. One concerns the status of archaeology as a quantitative and scientific discipline as well as, perhaps at the same time, an interpretative and qualitative discipline. Arguably, in some understanding of "universalising assumptions", the quantitative approach, say, to the development of inequality across 10,000 years of human history (Kohler and Smith 2018) does presumably by necessity deploy universalising assumptions about the nature of inequality across time and space. We also recall Binford's argument from 1965 that

> *"One obvious shortcoming of this theoretical position has been the development of archaeological systematics that have obviated any possibility of measuring multivariate phenomena and permit only the measurement of unspecified 'cultural differences and similarities,' as if these were univariate phenomena. As an alternative to this approach, it is proposed that culture be viewed as a system composed of subsystems, and it is suggested that differences and similarities between different classes of archaeological remains reflect different subsystems and hence may be expected to vary independently of each other in the normal operation of the system or during change in the system" (Binford 1965, 203).*

For many practitioners, the strength of archaeology in this sense resides in the larger scale study of different kinds of variation observed in the archaeological

record (Cochrane and Gardner 2011, 16). In other words, it is methodologically and pragmatically speaking hard to see how a discipline that for many practitioners is essentially, though perhaps not exclusively quantitative, could avoid at least some universalising assumptions.

A second issue is, also touched upon by Cunningham (in this volume) in his discussion of the indispensability of analogy, that if we shed universalism in favour of some "deep cultural and theoretical pluralism" (Wylie 1989, 5) and hold that "cultural forms may be entirely idiosyncratic and may diverge radically from any we know or could recognize" (Wylie 1989, 1), then what are the consequences? From such an extreme position it might follow, if pursued to its logical conclusion, that any analogies, and with that human knowledge, become altogether impossible. If the above is correct, then, the problem is the age old one of steering, with Odysseus, the narrow and winding path between the Scylla of relativism and the Charybdis of universalism and reductivism, not an outright rejection of one or the other pole.

However, our entanglement with the Enlightenment tradition does not end there. In fact, it is another "Enlightenment trope" that human knowledge involves the dualism of a struggle to overcome the limitations of our epistemological situatedness to access the ontological world of generative mechanisms, causes, effects, and laws.

Dualism about truth and objectivity, and critical realism

One aspect of the heritage of modernity surely is the correspondent theory of truth, the idea that our knowledge is, ideally, a "mirror of nature", as the imagery of the philosopher Richard Rorty (2009) had it. Rorty attributed this imagery to the "epistemological turn" of the "Descartes-Locke-Kant tradition" (Rorty 2009, 8) in which, as Kant put it in the *Critique of Pure Reason*, the idea was to examine "whether we do not get farther with the problems of metaphysics by assuming that the objects must conform to our cognition". A wide variety of Western thinkers, such as one Pierre Bourdieu here, agreed that in

> *"*[s]*o far as the social world is concerned, the neo-Kantian theory, which gives language and, more generally, representations a specifically symbolic efficacy in the construction of reality, is perfectly justified" (Bourdieu 1991, 105).*

In the estimation of anthropologist Adam Kuper, "this concept of culture" is "essentially a matter of ideas and values, a collective cast of mind [which] has become common currency" in human scientific theory (Kuper 2000, 227, 228). It is difficult these days not in some way to acknowledge that

> *"*[t]*ruth is not an accurate reflection of something non-human* [...] *rather, it is a matter of intersubjective consensus among human beings, one mediated by currently available theories, methods, and data",*

as one archaeologist put it (Saitta 2007, 269). In this sense, the very attempt to articulate the problem of knowledge is couched in terms of Enlightenment categories, that is, the dualism of the fallibility of human epistemology, the Kantian phenomenal, and the seemingly forever open question whether human epistemology ever touches the real, the noumenal.

In much cited favourite philosophies of science, for example, in the metaphysical realism of Roy Bhaskar (2008), philosophy can be seen to grapple with the same Kantian challenge: how to think about the situatedness of the human perspective

with regard to "the real" such that the possibility of objective knowledge does not become wholly illusory.

Bhaskar's account revolves around the conceptual response typical of philosophy of science after the later Wittgenstein (of the *Philosophical Investigations* (1958), and *On Certainty* (1975); see commentary in archaeology by Bintliff 2000; 2011), but one that ultimately goes back to Kant's transcendental philosophy. The response is that the very concepts central to science – concepts like data, testing and experimentation, and the idea of the fit of theory with data – *presuppose* generative mechanisms that are ontologically real albeit epistemologically to varying degrees known or available (see Graeber 2001, 52ff.). That is, it makes no sense to speak of testing or fitting if there is not something against which success is measured. More colloquially, the response has it that if you want to play ball, then you better accept that the ball is real and being played with – regardless of whether you will ever catch in play. Bhaskar's position is known as critical realism because it is "realistic" in its assumption that there are real generative mechanisms operational in the world, but it is also critical because it recognises that great many complications lie between the real and human experience of it.

Now, as a solution to the problem of finding a satisfying reform of our interpretative practices, I find critical realism unsatisfactory. I am not entering into a philosophical quarrel with it as much as finding it insufficient as a *description* of scientific activity. To be sure, in my experience of talking and working with, *e.g.*, palaeoenvironmental colleagues (Arponen *et al.* 2019), their self-confessed stance can indeed resemble that of a critical realist in that climate effects are ontologically assumed to be real, but our knowledge of their precise nature and impact are acknowledged to remain, in principle, open to different interpretations, underdetermined by data.

Where I find the critical realist picture insufficient, however, is in accounting for the role of the state of the art in academic research practice. I want to say that convincing research practices do not only seek to correlate available data and observations with the interpretation, but in addition, reflect upon and map out the alternative interpretative metatheories – and their approach is better for it. Critical realism would appear to suggest a picture of science in which, under the metaphysical assumption of the existence of a generative mechanism or mechanisms, scientists work to relate as wide a range as possible of available data to the interpretation that is thereby assumed to correspond to the generative mechanism. I believe that this is not a full picture of science because it leaves out reflection upon the metatheoretical pallet of options as a hallmark of what the community takes as objective science. Let me give an example.

A brief case study: Neolithic mass migrations

In a hotly debated piece of European archaeological interpretation regarding the formation of the Corded Ware Culture in Europe, Kristiansen *et al.* (2017) provided a comprehensive argument for the view that an abrupt and large-scale immigration of the Yamnaya people from the Pontic-Caspian steppe took place and fundamentally transformed Europe. The argument is backed up by newly generated aDNA evidence, evidence from linguistics, and combined with a wealth of archaeological evidence. By all accounts, the manner in which the study is formally executed is exemplary and aligned with critical realism in that large pools of data are systematically and comprehensively related to the interpretation and the presumed underlying generative mechanisms.

The reaction of parts of the international archaeological community to the study, however, has been furious (see *e.g.* Furholt 2017; 2021; Brück 2021; Crellin and Harris 2020; Frieman and Hofmann 2019; see also Heitz in this volume). An aspect of the reaction concerns the factuality of available aDNA data and whether it actually supports the kind of claims that are made based upon it (see, *e.g.*, Furholt 2017, 2ff.). The most furious reaction, however, seems to concern the perception of insufficient metatheoretical reflection upon the interpretive scheme deployed in Kristiansen *et al.* (2017) in contrast to available alternatives. That is to say, their interpretation is criticised for aligning with the historical national socialist views built upon the classical interpretations of the archaeologist Gustaf Kossinna. Again, their interpretation has been criticised for aligning with a one-sided concept of power focused on individualism of male warriorhood and coercion as opposed to a cooperative and inclusionary concept (Furholt 2021).

Dialogical and dialectic picture of science

My concern here is not to enter into these debates, but to make observations about them from the point of view of philosophy of science. Here, I want to suggest that the community reaction to Kristiansen *et al.* (2017) illustrates that there is an implicit, if you like *dialectical* or *dialogical* concept of good science at work here. In this concept, perhaps in particular in the humanities, the proposed interpretations are seen as needing to probe into their metatheoretical assumptions, so to speak in a dialectic or dialogue with alternatives, with their research history and even political implications, not contending simply with correlating data with interpretation. This articulates my sense that the critical realist picture of science, while accurate in many other ways, might still fall short of a full picture.

Returning, finally, to where this commentary started, we saw Cunningham (in this volume, 56) point out the impacts of Enlightenment thought upon what now are "widely accepted understandings about global cultural variation". The moral I intend the above discussion to have with regard to Cunningham's point is that the reform of those widely accepted understandings would need to proceed by way of a reflective, dialectical or dialogical mapping of available interpretative schemes. This might be what Cunningham means with the "cables and tacking" approach formulated by Alison Wylie (1989). In this mood, interpretation is always, if you like, in a reflective state of a Kuhnian revolutionary phase that is conscious of its interpretative paradigm and its alternatives (Kuhn 1996). The mapping of data with the interpretation proceeds from such a reflective stance, a stance that is in a dialogue or dialectic with alternative positions. That sort of a critical reflection, however, is also essentially indebted to something like the Enlightenment state of the analytic mind that distinguishes epistemology from ontology,[1] that is, it distinguishes the human schemes of thought from the ontology of what those schemes attempt to grapple with.

1 I am aware, but will not discuss it further here, that many authors in the so-called material turn (see Heitz in this volume) frequently use the word 'ontology' and even the plural 'ontologies'. For what it is worth, in comparison with its traditional philosophical usage, the material turn seems to either multiply or pluralise ontologies, which for philosophical naturalism might seem untenable, or in the last analysis confuse ontology with epistemology, the latter of which there can be plural. As the modern classic philosopher John Searle (1996, 5; 2010, ix) articulated, the main drift of naturalism, amidst epistemological differences in the construction of social realities from culture to culture, is that "we need to figure out how social reality fits into our overall ontology" so that we do not need to postulate "different ontological realms".

Modern and premodern rationality

Cunningham's contribution (in this volume) also draws attention to another important aspect of the heritage of modernity, namely, modernity's self-construction of the contrast between that which is modern and the pre-modern, "traditional", and "primitive". Cunningham explains the process as one involving modernity's self-conception of itself as utilitarian and rational in contrast to other exotic ways of life that were encountered by Europeans from the age of discovery, via colonialism to the early days of anthropology in the early 20th century. Cunningham suggests that the contrast is not real or necessary, but rather an artifact of European patterns of thought.

The issue is indeed vexing and reminds me of a prominent episode from 20th century philosophy and the philosophy of the social sciences. I want to raise this example (and briefly another one on the Windigo cult) to describe the possibility that we do seem to be able to distinguish "premodern" magical and other such reasons from "modern" instrumental reason, but it is not that premoderns held the one set and moderns the other; rather, we are able to happily mix and match.

The case of the Zande poison oracle, discussed in some detail in Winch's 1964 paper – with a title sure to raise eyebrows today, *Understanding Primitive Society* – in which Winch looks at the Central African Azande people's concept of magic as it is manifested in the Zande poison oracle practice. The details need not concern us too much here, but the basic gist of the practice is that amongst the Azande there would be oracles, individuals with the acknowledged skill to administer poison to a particular species of fowl, who then cut open the carcass, study the poisoned insides, and provide answers to pressing questions put to the oracle prior to the operation. The issue in Winch's (1964) paper is whether such a belief in the ability of the oracles to produce reliable answers is irrational, and whether it involves an empirically mistaken conception about the fundamental nature of reality to the effect that such oracle practice would have some causal or other effective basis.

The Azande were studied by the English anthropologist E. E. Evans-Pritchard (1976 [1937]) and Winch engages with this work. Winch detects in Evans-Pritchard a metaphysical attitude that Winch disagrees with and that he summarises by saying that:

> *"Evans-Pritchard, although he emphasizes that a member of scientific culture has a different conception of reality from that of a Zande believer in magic, wants to go beyond merely registering this fact and making the differences explicit, and to say, finally, that the scientific conception agrees with what reality actually is like, whereas the magical conception does not" (Winch 1964, 308).*

Philosophically, the argument that Winch builds upon here draws from the neo-Kantian picture of human action and sociality put forward in Winch's best-known book *The Idea of a Social Science and Its Relation to Philosophy* (1990 [1958]). In this picture of human action and sociality, human groups, societies and cultures appear as conglomerations of culturally competent beings who have been encultured, normatively trained and corrected, in the ways of their society, such that they now do their "thinking in patterns of thought provided us by the societies we live in", as Winch (1964, 308) put it.

From there, the argument goes into the point from philosophy of language saying that there is no unequivocal sense in which the Azande are wrong about the fundamental nature of reality because, by their standards, this is what their "patterns of thought" tell them and, crucially, there is no further court of judgement as to whether this belief is correct or incorrect. As Winch puts it:

> *"Evans-Pritchard* [...] *is trying to work with a conception of reality which is not determined by its actual use in language. He wants something against which that use can itself be appraised. But this is not possible; and no more possible in the case of scientific discourse than it is in any other." (Winch 1964, 309)*

Drawing from such a normativist picture, Winch and others argued that the Azande poison oracle practice must not be seen as based on an erroneous belief in the ability of the oracle to read information from poisoned fowl, but to reflect the Azande's own standards of intelligibility.

This sounds like fairly classic relativism from Winch (although see, *e.g.*, Zerilli 2016, chap. 8). However, more to the point of the present discussion, we are dealing with a classic moment in the debate about modern rationality and premodern irrationality, raised by Cunningham (in this volume). We seem to have the classic anthropologist misrepresenting the foreign culture he is studying, viewing it as an instance of primitive and traditional irrationality. The full story, however, is more complicated.

Writing in her collected works, one volume of which deals exclusively with Evans-Pritchard's work (including work on the Azande), the classic anthropologist Mary Douglas noted that the poison oracle practice was effectively "an instrument of political authority" (Douglas 2003, 51 [1980]) and that the princes of the Zande society had the means to control the oracles' pronouncements. They could declare the pronouncements a secret if they did not fit with their political objectives, for instance.

Not only that, but even Evans-Pritchard himself was clear of the political and other power invested into the Zande practice:

> *"Control over the poison oracle by the older men gives them great power over their juniors and it is one of the main sources of their prestige", [and also] "*[w]*omen are debarred not only from operating the poison oracle but from having anything to do with it" (Evans-Pritchard 1976, 131 [1937]; see also Chase 2005; Singer and Street 1972).*

Drawing from Evans-Pritchard's work, Douglas (2003 [1980]) details a whole host of further aspects – pertaining, for example, to the elite control over the acquisition of the poison as well as the oracles themselves – that suggest we get a pretty one-sided picture when we think of the poison oracle singly in terms of a magical worldview (and the Zande standards for its correctness) that it appears to imply. The philosopher Nigel Pleasants has observed that while the debates flowing from Evans-Pritchard's and Winch's works have "primarily focused on the logical, psychological, and metaphysical aspects of Zande belief and practice", it is clear that these same practices introduced "severe inequality, exploitation, and oppression in Zande social life" (Pleasants 2000, 302). In some ways, then, the Azande were terrifyingly modern!

Let me turn briefly to a second example, the so-called windigo cult (also spelled wiitiko or wendigo) of the indigenous North-American Algonkian peoples. According to the cult, a windigo is a cannibalistic supernatural being. In a number of anthropological accounts of this mythology, people are capable of being possessed by the windigo spirit as a result of which they would be drawn to committing acts of cannibalism.

The case of the putative windigo culture trait is interesting because it displays a parallel story to that of the Zande poison oracle, a story of culture that believes

in something empirically preposterous. The windigo trait was critically discussed in the 1980s by the American anthropologist Lou Marano (1982). Marano's conclusion was that the trait "is an artifact of research conducted with an emic/mental bias" (Marano 1982, 385), not a fact about that culture. He supports this conclusion with an extensive, critical literature review of the alleged cases of the trait in action. Marano's alternative explanation of some of these cases interprets them as instances of murder and cannibalism in times of survival stress – a motive and an epistemology that we moderns can thoroughly understand. This is not the place to evaluate this observation, but interestingly, also the Zande culture was under stress from European intrusions which might have served to heighten the role of the poison oracle.

Where does all this leave us with regard to Cunningham's question whether the premodern reason was fundamentally different from modern reason? The cases above, as well as those discussed by Graeber and Wengrove (2021, chap. 1), do not seem to allow any other than the mundane conclusion that they were a bit of both (also see the debate about Captain Cook in Hawaii between Sahlins 1995 and Obeyesekere 1997).

However, from the metatheoretical perspective of a philosopher of science, *if* we can agree that the premoderns were a bit of both – rational and irrational, empirically adept as well as prone to magic, and capable of scheming politically – then that means that these are categories that we consider as valid descriptions of modern and premodern forms of life. If that is so, then it is not that our categories of description are necessarily flawed and need a reform as much as that we are not clear when, where, and how to apply them. That is to say, our concepts appear to have a certain "open texture". The philosopher Ludwig Wittgenstein was one of the most influential philosophers of the 20th century. One of the many puzzles he typically developed in his thinking deals with, if you like, the open texture of the meaning of our concept of expecting:

> *"A dog believes his master is at the door. But can he also believe his master will come the day after tomorrow? – And what can he not do here? – How do I do it? – How am I supposed to answer this?" (Wittgenstein 1958, 175).*

Wittgenstein seemingly did not think that we could possibly answer a question like whether a dog can really justifiably be said to be expecting something in the sense that humans do. Certainly, we could *describe* differences in how humans behave when they anticipate – we make preparations and plans in a manner that is way more extensive than what dogs do.

In this sense, the later Wittgenstein's philosophy inspired a certain descriptive philosophy focused at cataloguing the diversity of human thought and its development in a sort of Geertzian "thick" description kind of way – inevitably, whether rightly or wrongly, drawing in the suspicion about relativism (Jarvie 2007; Risjord 2000). One strand of this later Wittgensteinian orientation was the Kuhnian philosophy of science in which it was difficult to distinguish the *context of rational justification* of why a given theory was entertained as true from the contingent and quirky historical *context of discovery* of the theory, as Kuhn recounted in the introduction to his classic book. In another strand, as encountered above, Peter Winch was unable to say that the Azande held false beliefs about the effectuality of their oracles, instead describing the oracle practice and its "standards of rationality". Moreover, the famous Foucauldian descriptions of historical contingencies and contrasts behind our concepts of gender, sex, and punishment can be seen to represent growth from this Wittgensteinian root.

Reflective interdisciplinary philosophy

My response to this state of affairs has been what my colleagues and I have come to refer to as the *reflective turn*. I believe this philosophy bears essential similarities to the kind of pragmatic philosophy of archaeology developed by Alison Wylie (also Cunningham, in this volume) that is reflective about and sensitive to differences in epistemic standpoints (Wylie 2012), but that nonetheless attempts are made to build up a pragmatic, positive and evidential scientific approach (Chapman and Wylie 2016). I will conclude my reaction with a brief account of this philosophy as I see it and have practised it.

From Kuhn's philosophy, I have adopted the concept of *paradigms* and the idea that scientific theories and statements rely upon such bodies of ideas in their construal of their objects of research. Paradigm is a useful word for describing the complex intellectual but also institutional and other backgrounds that scientists bring to bear in their work. Later on, following discussions with Konrad Ott (see Ott 1998), I have sought to refine my concept of paradigms with ideas about cores and theory elements and applications from Wolfgang Stegmüller (1976; 1979). Briefly, Stegmüller developed the Kuhnian approach arguing that paradigms are to be thought of "set theoretically" as open sets of theory elements and applications ("theory-nets") that can and often do change internally without necessarily losing their identity. Stegmüller described his approach as *structuralist* on the account of this set theory view of the make-up of paradigms. Stegmüller's first elaborations of the structural view argued that theories had a *core* (*Kern*) of ideas or "laws" that all applications of the theory were supposed to contain (Stegmüller 1976), but later preferred the set theory concept of paradigms as consisting of theory "elements" and "applications" with an open structure (Stegmüller 1979, chap. 4).

In my applications of the above view of theories, colleagues and I have reflectively investigated several archaeological topics. For example, periodically the notion of *environmental determinism* is addressed in archaeology. In our joint work on the notion (Arponen *et al.* 2019), palaeoenvironmental and other colleagues sought to expose what we called the biologistic and naturalistic assumptions about the human relationship to the "environmental frame" in which humans acquire their subsistence, which arguably gives rise to what critics describe as the environmental deterministic perspective. Our purpose was not to criticise colleagues for environmental determinism, but to bring to light some underlying presuppositions that give rise to "bad press" about environmental studies. In particular, as our paper discusses in detail, a recurring theme about environmental determinism appears to be the too narrow construal of the "environmental frame" to changes in which the humans are thought to have to react followed by later reversals and a realisation that the resource basis was more diverse and humans more adaptable than thought. The positive aspect in our analysis is the suggestion for palaeoenvironmental approaches to pay a closer initial attention to the tightness of the environmental frame in order to avert later critique.

In a second example, colleagues and I have reflectively engaged with the concept of *inequality* in archaeology (Arponen and Ohlrau 2023; Arponen *et al.* 2016) and beyond (Arponen 2018). Here too, our approach was one of seeking to expose certain archaeological and anthropological presuppositions about the basic mechanisms of how inequality arises, such as that prehistorical surplus production and technological innovations created demographic pressures as well as the need to socio-culturally manage growing and more diverse populations, leading into a feedback loop of

increasing social complexity, more productivity, more innovation, and thus more centralisation. Following the work of Amartya Sen (Sen 1980; 2004), we suggested that the underlying concept of material value produces these narratives, but that a capability-based account could lead to a different perspective which we sought to make archaeologically visible in our case studies (Arponen *et al.* 2016; 2024).

In sum, these works took the view that we can well reflectively reason about the foundations of our knowledge and thereby improve it. As we put it in our opening words, this sort of reflective improvement is for me an essential feature of modern reason conceived not as a doctrine but as a method.

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Origins of the Anthropocene in the Neolithic: A Contribution to an Understanding of the Deep Roots of the Modern Condition

Konrad Ott

Modernity and beyond

Modern and postmodern philosophy

According to Habermas (1985 [2001]),[1] the philosophical discourse on the modern condition started after Hegel's death. The legacy of Hegel's comprehensive philosophical system with freedom as the supreme idea of spirit splits apart into a) philosophies of individual existence (Kierkegaard), b) into political economy (Marx), and c) into a critique of reason (Nietzsche). Habermas saw Michel Foucault's theory of the intertwinement of discourse and power in the footsteps of Nietzsche. Postmodern thinkers saw Habermas as their main opponent since he wished to continue the unfinished project of modernity under post-metaphysical premises and within the paradigm of the so-called "linguistic turn".

In his discourse on modernity, Habermas presupposed his *Theorie des kommunikativen Handelns* (1981) and its modes of validity claims and related types of discourse. This theory transformed the Cartesian and Kantian paradigm of sub-

1 Habermas (1985 [2001]) relied on lectures that he held in 1983 at Frankfurt University. I was a student there.

jectivity. In 1984, when the German edition of the book was in print, there was a special volume on *Modernity and Postmodernity* in the journal *New German Critique* (Number 33, Autumn, 1984). The contributions to this volume shed light on the highly complex and dialectical constellation between modern and post-modern philosophies. I follow Huyssen (1984) who argued that early post-modern intellectuals did not wish to replace modernity by something else, but rather wished to bring fresh energy into an exhausted modernity. I endorse this motive. Later, this motive eclipsed into denials (subjectivity, reality, truth, reason, macro-history). In my impression, the debate has become shallower in the three decades since. Therefore, I wish to mention some points for a new round in the discourses on modernity before presenting my macro-historical contribution.

In her "*Epistemologies of Postmodernism*" (1984), Seyla Benhabib identified crucial topics of "classical" post-modern philosophies: a) emphasis of otherness, b) critique against representational episteme and truth, c) rejection of meta-narratives, d) an agonistic concept of language, e) a "recognition of the heteromorphous nature of language games" (Lyotard, quoted in Benhabib 1984, 105). From these topics, it becomes clear why Lyotard (1984, 60) claims that

> *"postmodern science* [...] *is theorizing its own evolution as discontinuous, catastrophic, nonrectifiable, and paradoxical."*

From a Habermasian perspective, d) and e) are crucial. Since Lyotard (1984,10) states:

> "[...] *to speak is to fight, in the sense of playing, and speech acts fall within the domain of a general agonistics"*

his position is incompatible with Habermas' concept of substantiating validity claims via arguments within a discourse. With respect to e), Habermas regards the misleading term "language game" in Wittgenstein's *Philosophical Investigations* as speech acts (*sensu* Austin), while Lyotard takes them literally as playful games. To Habermas, discourse has a continuity with ordinary communicative action, while discourses are devices of power and rhetoric to Foucault and "games to make believe" to Lyotard. Narratives are games among others.

> *"All we can do is gaze in wonderment at the diversity of discursive species, just as we do at the diversity of plant or animal species" (Lyotard 1984, 26).*

While Habermas makes commitments of arguing explicit from the perspective of participants in communicative and discursive action, Lyotard (and Foucault) just observe ("gaze at") the wonderland of discursive events.

With respect to c), Foster argues that post-modernism claims the "fragmentation of history" (Foster 1984, 73). This claim is prominent in Lyotard (1984). He defines modernity via historical metanarratives about enlightenment, progress, liberation, evolution, *etc*. Lyotard (1984) is highly reluctant about such metanarratives including Hegelian and Marxian ones. According to Lyotard's argument, even critical counter-narratives against Eurocentrism would be "totalizing", if they are macro-narratives in scope, as "global history". If history splits apart into a multitude of fragments, neither ambitious middle-range theories nor macro-narratives are within reach, not to speak about "stages" or "evolution". I do not take an aversion against macro-narratives as a dogma. I see Lyotard's aversion as similar to Jacob Burckhardt's aversion against universal world history (Burkhardt, J., 1970 [1905]). If so, Lyotard is just repeating a specific "idiographic" position (Windel-

band 1907) within the modern debate about different ways of doing history. Foucault's appreciation of genealogy (Foucault 1977) and Lyotard's preference for a multitude of micro-histories constitute a tension *within* the post-modern discourse on history that has never been addressed within the post-modern camp.

Post-modern archaeology cannot escape the epistemic logic of history. This logic rests upon the categories of a) the universal (or general), b) the particular and c) the individual. Three categories constitute three types of doing history and of doing prehistoric archaeology. "Grand" narratives (or macro-history) is one type of doing history beside histories of particularities and micro-histories. Perreault (2019) argues that the archaeological record is well-suited for macro-history:

> *"By emphasizing microscale processes, archaeologists are not only misusing the archaeological record, but underusing it" (Perreault 2019, 161).*

Perreault proposes to recalibrate the archaeological agenda to macroscale patterns and processes. Since I give credit to Perreault's argument, prehistoric archaeology should become more courageous in doing macro-history, in identifying large-scale patterns, and in presenting "risky" past-present connectivities.

"Otherness" (a) is another great topic of post-modernism. Cunningham (in this volume) sees modernity as the ideology of capitalism. Such an ideology obscures non-modern ways of life. Cunningham (in this volume, 65) states:

> *"As that ideology, modernity identifies a historical rupture in human subjectivities that seems to create an interpretive challenge for 'modern' archaeologists who seek to know 'premodern' pasts."*

If contemporary anthropologists and historians are biased by such ideology, they must fail to recognise other ways of life. Thus, ethnoarchaeology should try hard to escape the modern paradigm. This position should say some words on the concept of "ideology of capitalism" – and why and how such ideology misrepresents otherness.

One should draw a distinction between "alterity" and "alienity" according to Scholtes (2007). While "*alterity*" is about both differences and similarities and allows for historical comparison, analogical reasoning, and even past-present connectivities, "*alienity*" means complete (or: radical) otherness that can be stated as such but not conceptually specified. "*Alienity*" is abstract and absolute otherness being located at the extreme pole of a gradient of alterities. If one identifies alterity with alienity, history, prehistoric archaeology and ethnoarchaeology get into epistemological trouble. An emphasis on alienity undermines the search for historical truth because one can never have solid knowledge on alienity. Alterity, however, allows for knowledge of the other and for past-present-connectivities that do not deny differences, but also see similarities between "us" and "them".

At the conference from which this volume emerged, my Habermasian approach was in a minority, if not in an outsider position because it remains in the modern paradigm in epistemology, economics, and ethics (Ott 2023a; however, see Arponen in this volume). Following Habermas (1985 [2001]), political economics belongs to the legacy of Hegel who himself gave an analysis of the intrinsic dynamics of a post-feudal market economy in his philosophy of ethical life (Ott 2023b). To Hegel, economic life is ethical life in its negative "egoistic" mode. This negative egoistic mode, however, brings about both prosperity and inequality. Marx' theory of economic value, the pure form of commodity, and fetishism of commodities (Marx 1970 [1867]) remained within the paradigm of "classical" modern economics, especially David Ricardo's (1977 [1817])

theory of labour and value. Moreover, Marx outlined a progressive stage model of universal history as a general result of his studies in political economy.[2] Marx presents a grand economic narrative about modes of production.

With respect to economics, Bataille looks far more attractive as a founding father of a post-modern economic theory (Habermas 1984). Bataille relied on Mauss' concept of gifting as a mode of exchange before trade. Postmodern economics would be interested in modes of production and exchange throughout history that look "inefficient", "irrational", "subversive" and "wasteful" from the perspective of contemporary mainstream economics. Since mainstream economics supposes legal titles on property, post-modern economic narratives might be interested in practices like piracy or sabotage. Combining Lyotard and Bataille, postmodern economic history would be a parade of micro-histories of non-efficient and subversive economic practices. Thus, postmodern archaeology can flag itself as "anarchism". But there are other ways of bringing economic theory into archaeology, as a reloading of the legacy of historical materialism (Ott 2023a, part II). According to Marx (1970 [1859], 636), modern economic theories could shed light onto all previous modes of production.

> *"Bourgeois society is the most developed and the most complex historic organization of production. The categories which express its relations, the comprehension of its structure, thereby also allows insights into the structure and the relations of production of all the vanished social formations* [...]. *The bourgeois economy thus supplies the key to the ancient, etc."*[3]

I endorse this licence to investigate the presumptive origins of growth.

The presence of growth

I wish to address the archaic[4] origins and the "longue durée" of a still persisting heritage of the modern condition: the deeply rooted aspiration for "more", that is *growth*. Conventional economic wisdom tells that economic growth, as measured by Gross Domestic Product, reduces scarcity and creates material wealth. The more commodities are produced, the less material scarcity there is in households. Archaeology sees material wealth as one dimension of wealth beside social and embodied wealth. Economic growth is a long-term process of increasing material wealth that has huge impacts on cultures, personalities, and natural environments. Trentmann (2016) presents a middle-range theory of material household wealth over 500 years, including non-Western consumerism.

The current debate about a great transformation to an ecologically sustainable society that respects planetary boundaries (WBGU 2011) includes a debate of how to overcome the addiction to economic growth that spurs even policy making to a large degree (Jackson 2016). Modern societies are engines of growth that in the

2 Marx (1970 [1859], 8, "Entwicklungsstufen"): "In broad outline, the Asiatic, ancient, feudal and modern bourgeois modes of production may be designated as epochs marking progress in the economic development of society." [transl. ed.: *"In großen Umrissen können asiatische, antike, feudale und modern bürgerliche Produktionsweisen als progressive Epochen der ökonomischen Gesellschaftsformation bezeichnet werden"*]. The stages are seen as evolutionary ones.

3 This English translation is available at: https://www.marxists.org/subject/dialectics/marx-engels/grundisse.htm [last accessed 6 December, 2023]. For the German version, see: Marx, K. 1859. Zur Kritik der Politischen Ökonomie. MEW 13. Berlin: Dietz, 136.

4 The term "archaic" denotes all history before ancient times (600 BCE). Although I dislike the term "prehistoric", I use both terms as synonyms.

longer run might be incompatible with a finite planet and its biodiversity. As many authors have argued, continued economic growth established since 1820 (Aghion *et al.* 2021) terminated in a "great acceleration" since the 1950s (Pfister 2010) that pushed humanity into a new geological age, dubbed the "Anthropocene". This naming entails the diagnosis that our planet has entered a new age denoted as the "Anthropocene". If one gives credit to this diagnosis, a historical question becomes unavoidable: *When did the Anthropocene originate?* The answer to this unavoidable question must be given by a macro-narrative. Most archaeologists are aware of the ecological crisis. Many of them are, however, reluctant against such a macro-narrative. They may like the content of the story, but, following Lyotard, they oppose such "grand" stories reoccurring in archaeology. According to other authors, however, we may have reached a post-post-modern situation in which macro-history again becomes a legitimate enterprise. Heitz (in this volume) writes that different turns (digital, science, material, ontological) have transformed post-modernism into a post-post-modernism: "meta-modernity". According to Heitz (in this volume, 47):

> *"Metamodern archaeologies are characterised by oscillating or synthetically combining different research attitudes that go back to discourses of earlier modernities, such as modernity and postmodernity."*

I shall conceive rather than oscillate, because oscillations make my mind dizzy.

Organising the argument

Following this outline, in this contribution the claim is made explicit in the next subsection. In the subsequent subsection, the overall argument starts identifying challenges. An ancient chorus song is taken as an intellectual spike of the "thin" Anthropocene. Thereafter, the central claim rests on an inverse Hegelian concept: *qualitative achievements eclipse into ever enlarging quantities*. Such quantities finally collapse into a new quality. The instances converge to an expansionist pattern: "the more the better" ("growth"). This scheme underlies modern ideas of progress, success, efficiency, large scales, growth, and maximising the good. The final section returns to the modern/post-modern divide with respect to ethics – which ethical theories might be able to cope with the troubling situation of a growth-addicted Anthropocene?

Claim and outline

Two premises are to be applied: The concept of the Anthropocene is helpful a) as a *diagnostic* concept for the globalised planet in the 21st century and b) to make connectivities between prehistoric[5] times and the moral and political challenges of the present age. My hypothesis claims *that the Anthropocene originates in prehistoric times*. More specifically, I claim that specific Neolithic achievements that allowed for unlimited growth in quantities have paved the long and windy road towards the current state of the full-fledged Anthropocene.

The Anthropocene seems to be the result of the "European", or: "Eurocentric" mindset, which had different waves throughout history. Such waves were the early globalisation of the 16th century, the formation of the Baconian superstructure

5 Personally, I dislike the term "prehistory" since all human life is historical. Writings do not constitute human historicity. I would prefer "archaic", but conform to the terminological convention in archaeology.

(science, technology, industries) from the 18th century onwards, the period of capitalism, colonialism and imperialism in the 19th century, and expansionism, extractivism and consumerism in the 20th century, culminating in the great acceleration.

Paul Crutzen's (2002) proposal to coin the recent period of the Earth's history as the "Anthropocene" has been adopted from a geological perspective (Waters *et al.* 2016; Zalasiewicz *et al.* 2015; 2020; Walker *et al.* 2019, 10).[6] Flannery (2018) argues that the Pleistocene epoch was replaced by the Anthropocene at the end of the 20th century, because there will be no glacial ages any more for a very long geological time. Crutzen's proposal can be traced back into the 19th century (Mauelshagen 2016). Haeckel (1870, 347) spoke about an "*anthropozöisches Zeitalter*". According to Haeckel, radiation of the species *Homo sapiens* is the beginning of a new major epoch within the organic history of the Earth. G. P. Marsh's book (1864) had the subtitle *The Earth as Modified by Human Action*. Marsh sees humans as disturbing agents on a global scale. Following Marsh, Thomas (1955) edited an impressive volume on *Man's Role in Changing the Face of the Earth.* Pfister (2010) rightly points at the 1950s syndrome. The term "biodiversity" was coined to address the sixth mass extinction in the history of the planet Earth caused by humans (Wilson 1988; Henrich 2003). Thus, we see a finite planet shaped by a rapidly growing human population that is equipped with modern technologies converting nature into cultivated areas.

The general term "Anthropocene" should neither imply nor suggest that all humans equally contribute to the current situation. Environmental impacts of different nations and strata within nations are highly different. The term "Anthropocene" points to the aggregate impacts of our species, while specific sociological and economic investigations should point to the differences between countries, income groups, elites, *etc*. The article here deals with European origins only. My claim relies on standard models of European Neolithisation (Robb 2013; Zimmermann 2007).

When did the Anthropocene originate? Some historians regard the "great acceleration" since the 1950s as actual origins (Pfister 2010). Radiogenic fallout can also be taken as a criterion of origin (Walker *et al.* 2019). Crutzen argues that the Anthropocene originated in the process of industrialisation since, say, 1750. Some scholars date it back to early forms of globalisation (from 1500 or 1600 onward). This general claim has been first made by Ruddiman (2003), and has been repeated by Scott (2017). Smith and Zeder (2013, 8) are even more straightforward:

> *"The initial domestication of plants and animals, and the development of agricultural economies and landscapes are identified as marking the beginning of the Anthropocene epoch."*

Some ecologists see a "very early" Anthropocene originating with the human use of fire, megafaunal extinction, and the arrival of humans on all continents except Antarctica (Corlett 2015). Scott (2017, 3) distinguishes between a "thin" and a "thick" Anthropocene. "Thin" and "thick" are metaphors for origins and full-blown essence. The emergence of the "thick" Anthropocene is an epistemic precondition for research on its origins.[7] Knowing the essential result is a precondition for genealogical research. If so, we are the first generation of scholars able to research the origins, building blocks, patterns, the crucial achievements, and

6 The geological societies, however, have not yet officially agreed on the stratigraphical proposal of the Anthropocene-group.

7 This also is a Marxian idea. To Marx, capitalisms must have emerged fully, if research on its origins should make sense at all. One must be familiar with a market economy in order to research its origins (Polanyi 2011 [1944]).

the final actualisation of the Anthropocene. If we are in such an epistemic position, we should not underuse it.

Human populations and technologies in the Neolithic and the Bronze Age were not suited to change the global records deeply, regardless of the role of fire.[8] One crucial difference between the prehistoric past and the present is the number of humans. In the Neolithic, less than one person lived per square kilometre (Zimmermann 2007). Population growth was slow or very slow in the Neolithic. Scott (2017) estimates that there were about 50 million humans alive at 1000 BCE and far less before (2-5 million worldwide at ca. 10,000 BCE). 50 million humans, who were concentrated in a few areas (such as the Fertile Crescent, the Indus Valley, Egypt, on Chinese river plains, *etc.*), were not enough to shape global cycles. The early "thin" Anthropocene neither changed the climate, nor polluted the ocean or destroyed large primary forests. It originated on a small-scale, not a large-scale. The origins of the Anthropocene were innovations, not increase.

The *method* of the argument is *genealogical*. I see this method at work in Horkheimer's and Adorno's (1944 [1947]) book on the *Dialektik der Aufklärung*. Horkheimer and Adorno tried to identify the archaic and ancient origins of the collapse of the Enlightenment into barbarism. Horkheimer and Adorno outlined how reason collapsed into instrumental rationality, how conceptual thinking collapsed into nominalism, how domination over hostile nature collapsed into oppression of inner nature and cruelty against sentient animals.

The *logic* of the hypothesis is *abductive*: If "we" humans are now (for better or worse) "makers" ("performers") of the Anthropocene, there might be some patterns, structures, and mechanisms within the human way of life since the Neolithic which support such making. If such patterns, spikes, structures, and mechanisms can be identified and historically reconstructed, the upshot of the Anthropocene must be the final outcome, given some supportive circumstances (such as fossil fuels and vaccines). It makes sense to distinguish between physical and intellectual "spikes" of the Anthropocene. If my thesis holds, there must be both material and intellectual spikes of an early ("thin") Anthropocene. In the next section, I shall identify one ancient intellectual spike. This spike opens lines of analogical reasoning and past-present-connectivities.

Challenges of the Anthropocene

Physical indicators of the Anthropocene are increasing atmospheric greenhouse gas (GHG) concentrations, population growth,[9] urban agglomeration, mass extinction of species, large-scale agriculture, industrialised meat production, extractivism in large mining areas (perhaps including the ocean floor in the near future), global trade, overfishing, ocean acidification, new radioactive substances, *etc*. Sea-level rise and ocean acidification are among the side effects of GHG emissions (Böhm and Ott 2019). Human activities spread neo-biota around the

8 Scott and Ruddiman both emphasise the role of fire. This Promethean legacy originated before the Neolithic. Fireplaces were highly adaptive. Cooking helped digestion. Fire was supportive to human radiation across the globe. To Scott (2017, 42), humans are a fire-adapted species, a "pyrophyte".

9 Humans proliferate (over)exponentially in modern times. Demographic patterns (birth and death rates) changed dramatically since 1800 CE leading to exponential population growth. At this moment in history, there are 8 billion humans and there will be roughly 9.6 billion people in 2050. Population now matters on all parameters: food, housing, transport, electricity generation, *etc*. The Anthropocene is a world full of humans, a crowded world. Malthusianism was falsified on the European scale by agricultural progress (Liebig's fertilisers), but it has not been falsified on the global scale today.

globe. Humans practice large-scale damming of rivers, mining, and clear-cutting of primary forests. They are fishing down the marine food web and, by doing so, they take influence on the evolution of fish species. They convert natural systems into agricultural land and into (post-)colonial plantations. Humans now settle in mega-cities, many of them located at coastlines of the Global South. The global patterns of consumption become more equal (Rosling 2018) despite the fact that the amount of materials and energies being consumed are higher in the Global North. The global mean temperature (GMT) is about to increase (at least) by about 2°C compared to preindustrial times. Despite 30 years of climate negotiations, the global emissions of greenhouse-gases (GHG) did not peak yet. If emissions remain high over the century, GMT might even increase up to 3-4°C. If so, humankind may leave the temperature range of the mild Holocene, affect tipping points and move toward "hothouse Earth". It seems safe to argue that the situation of the Anthropocene, if described properly, constitutes concerns, fears, and anxieties on the side of its "makers".

Each indicator has a Braudelian "longue durée" history of its (Braudel *et al.* 1985). If macro-narratives were no longer viable in the postmodern condition, historians and archaeologists should restrict themselves to the many environmental micro-narratives of humans changing the face of the earth. The best compilations of more than sixty micro-narratives, however, point to specific generic patterns of subduing nature and the colonisation of non-Western cultures (Bork and Winiwarter 2019). If so, there is no intellectual progress in isolating environmental micro-narratives from each other.

To Marx (1970 [1867]), the inclination to growth is not "human", but is rather rooted in the anonymous mechanisms of capital accumulation. Marx states (1970 [1867], 167): "*Die Bewegung des Kapitals ist daher maßlos*" [transl. ed. "The circulation of capital has therefore no limits."]. Thus, Marxists propose to replace the term "Anthropocene" with the term "Capitalocene". This is not just wording, as the term "Capitalocene" indicates that humans are determined by economic laws which are beyond their control as long as there is private property over means of production. As I wish to demonstrate in the article, the accumulation of stocks of man-made capital is only a recent upshot of an attitude that has deep roots in human history.

Sophocles, human achievements and expansionist eclipses

The chorus song in the "Antigone"

In his *Prinzip Verantwortung* (1979), philosopher Hans Jonas reminds us of the chorus song in Sophocles' "*Antigone*". To Jonas, this song points to the modern predicament. Sophocles' tragedy is dated to 440 BCE. At this time, the transformation from the Homerian period to the Athenian period was completed (Glotz 1926). The chorus song praises the capabilities of the human being to master a world of nature and to constitute culture.[10] The first sentence: *polla ta deina kouden anthrōpou deinoteron pelei*, especially the word *deinos* has many translations. There are ambiguities enshrined in the word. "Deinos" might be translated as "fearful", "terrible", "marvellous", "powerful", "skillful". The comparative term *deinoteron*

10 It starts with the potentially gender-neutral *anthrōpos* ("human being", usually translated as man), but already in the first antistrophe it turns towards the exclusively male term *anēr* and repeats masculine participles and pronouns. The focus on "man" is also due to the gender bias of ancient society and will be ignored in the following.

means "more than anything else". The word denotes something that transgresses the expectations and the usual, something supernatural. On the bright side, humans are praiseworthy and their achievements are glorious, overwhelming, striking, and marvellous. Following Utzinger (2003), one may consider "overwhelming" as one meaning. I would prefer "extremely striking" as a translation for the first aspect of the word. On its dark side, *deinos* has been translated as "monstrous". Moreover, *deinos* has connotations of hubris. Hubris means to overrate one's capabilities and to set oneself on a par with deities. "*Deinos*" indicates that humans can go too far and may fail on moral grounds. In an English translation, the song reads as follows:

At many things – wonders,
Terrors – we feel awe,
But at nothing more
Than at man. This
Being sails the gray-
White sea running before
Winter storm winds, he
Scuds beneath high
Waves surging over him
On each side;
And Gaia, the Earth,
Forever undestroyed and
Unwearying, highest of
All the gods, he
Wears away, year
After year, as his plows
Cross ceaselessly
Back and forth, turning
Her soil with the
Offspring of horses.
The clans of the birds,
With minds light as air,
And tribes of beasts of
The wilderness, and water-
Dwelling sea creatures-
All these he
Catches, in the close-
Woven nets he
Throws around them,
And he carries them
Off, this man, most
Cunning of all.
With devices he
Masters the beast that
Beds in the wild and
Roams mountains – he harnesses
The horse with shaggy
Mane, he yokes
The never-wearied
Mountain bull.
He has taught himself
Speech and thoughts
Swift as the wind;
And a temperament for
The laws of towns;
And how to escape
Frost-hardened bedding
Under the open
Sky and the arrows
Of harsh rain – inventive
In everything, this
Man. Without invention he
Meets nothing that
Might come. Only from
Hades will he not
Procure some means of
Escape. Yet he has
Cunningly escaped from
Sicknesses that had
Seemed beyond his devices.
Full of skills and
Devising, even beyond
Hope, is the intelligent
Art that leads him
Both to evil and
To good. Honoring the
Laws of the earth
And the justice of
The gods, to which
Men swear, he stands
High in his city.
But outside any
City is he who dares
To consort with
What is wrong: let
Him who would do
Such things not
Be the companion
At my hearth nor have
The same thoughts as I!

The temporal perspective of the song points from ancient Greece in retrospect to previous success stories of humans. Sophocles' song includes only a selection of inventions. It mentions neither metallurgy and religious practices nor that humans are the only beings who can control fire. Control of fire was praised in the ancient myth of Prometheus.[11] Sophocles seems to presuppose the Promethean legacy.

I see Sophocles' song as retrospection into prehistoric times, being full of "wonders", say: *achievements* that brought about the societal life of ancient *poleis*. The "*polis*"-way-of life includes, beside city building itself, a division of labour, arts and crafts, long-distance trade, money and commerce, social stratification including slavery, colonisation, sportive games, rhetoric-agonistic democracy, theatre, and philosophy. Humans could not have leaped from a hunter-gatherer way of life into the "polis" way of life. The period in between these two distinct modes of human life can be seen as a transition period (= transformation) with reinforcing upswing mechanisms of growth and progress. As Sophocles suggests, no other being on Earth can compete with humans in any of these "*deinon*"-respects.

The domestication and breeding of animals, crop agriculture, food storage, fisheries with nets, shipping and long-distance trade, settlements and urban centres of commerce and religion, division of labour, metallurgies, and medicine are essential Neolithic achievements. Following Robb (2013), we can conceive a "Neolithic package" of achievements.

The term "achievement" belongs to a cluster of concepts indicating improvements. "Better" may mean "more" of something, *i.e.*, "good", or "less" of something, *i.e.*, "bad". There are evaluations as "easier", "more comfortable", "more convenient", "less burdensome", "less precarious", "less painful", "less brief".[12] Technological, cultural, political and moral achievements (improvements) are something we wish to keep and wish to continue as traditions. Achievements persist, spread, disseminate, and evolve in the longer run.[13]

Sophocles' song constitutes commonalities between prehistoric and present times. Obviously, these achievements are not alien to us. They are present practices and we are consuming their results on a daily base. Neolithic achievements shape our (post)modern lives. Perhaps, a Hegelian idea can make this point explicit: Humans enrich their world with achievements that are continued within the flow of generations. If achievements emerge and actualise, they persist and endure. They become customs and are *eternalised* by way of practices being performed *since then until now*. Persisting practices become knowledge ("know that") and practices ("know how") (Ryle 1949). Humans are not forgetful about their achievements, even if there might be periods of recession and doom.

Achievements become *expansive* over long spans of time.[14] Slowly, quantities and scales increased. In the very long run, a dialectical transformation ("eclipse") of specific qualitative achievements into an unlimited increase in quantities occurs

11 Bosinski (2007, 33) estimates that humans have used fire more than 1 million years.

12 Western scholars living a digitalised, comfortable, decent academic life with nice salaries should not become ignorant about achievements which are taken for granted in the "thick" Anthropocene. They should not forget how miserable human life most often has been.

13 If one registers achievements, one may ask, what kind of reasons a presumptive abolition movement might have. Abolition might be demanded by moral theories, as some currents in current animal rights movement demand an abolition of domestication, but I do not see any abolition of such achievements through human history.

14 Braudel *et al.* (1985) pointed at "long duration" in history. In a similar sense, we suppose millennia for the origins of the thin Anthropocene. Such time spans are supposed in the argument. The Anthropocene is not an event.

(expansion, growth).[15] A quality denotes a "how" ("*qualis*") while a quantity denotes a "how much" ("*quantus*"). An increase in quantities can transform into a new quality, as sand gradually transforms into a dune. The crucial point is this: The essential Neolithic achievements have no *intrinsic* limitations in terms of quantity. There are no intrinsic measures ("*Maß*") for limitations in quantity and volume.[16] One can always add a further unit, if circumstances and technologies allow for it, be it the number of knots in a net, transport capacities of ships, cleared forests, size of agricultural fields, floors in houses, number of domesticated animals, breeding practices, storage of crops, trade volumes, roads, and even medicine. The achievements expand in their quantities on different spatial and temporal scales until they reach and transgress planetary boundaries. What Marx (1970 [1867], 167) writes about capitalism ("*maßlos*"), is true in a generic sense. The achievements are intrinsically expansive up to excess. Excessiveness, however, belongs to the dark side of "*deinos*".

Let us scaffold a simple conceptual scheme:[17] A qualitative achievement (Q-1), first, expands over historical times into increasing quantities (Q-2) and, later, collapses into a new quality with many negative side effects and risks (Q-3). Now, the slow origins and the rapid upshot of the Anthropocene since industrialisation and the great acceleration can be perceived as an eclipse of basic Neolithic achievements (Q-1-qualities) into increasing Q-2-quantities over historical times which have collapsed in a new (excessive and highly dangerous) Q-3-quality since industrialisation, colonialism, and the great acceleration. Q-1 is, by definition, something "good to have". Abolition of Q-1 would affect our ways of life profoundly: no shipping, no domestication, no medicine, no urban life, *etc*. Q-2 has been a long period of "more of the good" which seems to equal "better". If x is good, x+1 is better than x, x+2 is better than x+1 – *ad infinitum*. This is the utilitarian logic of maximising the good. Such a pattern is linear, not dialectic. Q-2 has been passed throughout historical waves (the Neolithic, antiquity, and the time periods 1500, 1800, and 1950 CE). These Q-2 numbers ("volumes") may be researched over all relevant historical times to time series. Here, "big data" might be helpful for such macro-histories that may reveal patterns. The general long-term pattern is "growth". The eclipse of Q-2 into Q-3 terminates in a state of excessiveness, crisis, danger, and apocalyptic anxieties. Q-3 is the situation of the Anthropocene. If so, there is a quest for another transformation from Q-3 to some Q-4. This quest fuels the environmental discourse since the 1970s. Such a transformation cannot be a continuity of Q-2 ("growth"), but it should not abolish Q-1 ("achievement"). Q-4 is a better way (mode) of doing Q-1 and it should help to escape the present state of crisis (Q-3). I have outlined an ethics for a transformation into Q-4 elsewhere (Ott 2023a, part 4) and come back to the underlying ethical ideas in the final subsection.

Here I focus on epistemic relations: The relation Q-1 → Q-2 is a *past-past*-relation. It can be filled with many historical case studies and narratives. The relation (Q-1 → Q-3) is a *past-present*-relation. The relation (Q-1 → Q-2 → Q-3) is a *past-past-present*-relation. The relation (Q-3 → Q-4) is either prospective or prescriptive (or both). Q-4 would be a specific prospect for a "good" Anthropocene. From an ethical point of view, intellectual proposals about "Q-4" states are evaluative and/or normative investments entailing concepts such as sustainability, resilience, justice, degrowth, *etc*. From the

15 The transition from quantity to new qualities has been seen as a mechanism of social evolution by Carneiro (2000) who follows Hegel, Marx, and Engels. I see a more complex mechanism. There were, first, qualities in low numbers which expanded into quantities and, far later, an eclipse into another quality which is different from the first one.

16 The same holds for the art of earning money. Earning (more) money became a supreme principle of ancient market economies. To Aristotle, such an economy was unnatural and excessive.

17 The epistemology of conceptual scaffolding is outlined in Ott (2023a, part I).

perspective of the DPSIR-model (Ribeiro *et al.* 2024), the Q-2 → Q-3 trajectories are drivers and pressures, Q-3 are states and impacts, while Q-4 is about response.[18]

The relation (Q-3 → Q-4) should not abstract from (Q-1 → Q-2 → Q-3). There is a bulk of recent literature on the "Great Transformation" (Q-3 → Q-4) which is ignorant of history. The alternative is to navigate through (Q-1 → Q-2 → Q-3) *before* addressing (Q-3 → Q-4) from moral principles or ideas about ideal global justice. A macro-history of the Anthropocene trajectory would be composed from (Q-1 → Q-2 → Q-3 → Q-4): *origins and achievements (Q-1), expansion and growth (Q-2), excessiveness and crisis (Q-3), future solution (or failure)* (*Q-4*). In Ott (2023a, part 3), I analyse the eclipse of achievements into excessive quantities as a macro-historical pattern with respect to fishing with nets, shipping, domestication, agriculture, urbanism, and deforestation. It is beyond the scope of this article to repeat the analyses in a nutshell.

Modern and postmodern ethics

If this generic pattern of eclipses from inventive Q-1-ideas over expansionist Q-2 routes to contemporary excessive Q-3-quantities is robust, the Anthropocene has deep and still under-researched roots. Clearly, many non-Western cultures have also invented such achievements without increasing numbers, volumes, and size. There is a deep entrenchment of European ways of life since the Neolithic with respect to increased quantities, enlargements, expansion, acceleration, growth, excessiveness, "more". Therefore, we need more research why the "growth"-orientation became such a dominant strategy in European civilisation, but not in all other cultures. Graeber and Wengrow (2021, 274) see an "explosive growth potential" of a specific "European" constellation. I leave it as open question whether this growth-strategy is widespread "human" or particularly "European". Here, the concept of social archaeology (Ribeiro 2021) can and should be supposed.

It seems possible to correlate patterns of economic thought with the achievements being praised by Sophocles into a perspective upon the emergence of modern "European" technological and industrial civilisation. For example, engineering projects have been carried out on a continental scale (van Laak 1999), so that the U.S. appears to be a liberalised variant of the European spirit (Hughes 1989). The modernisation projects in the USSR and China aimed at wealth generation by liberating productive forces in socialist modes of production. The USSR wanted to make great Siberian rivers flow to the south where they should irrigate the deserts. The large canals in Turkmenistan made the Aral Lake collapse. Communism was expansionist and excessive as well (Ott 2013).

The Q-3 trajectories and the diagnosis of the Anthropocene suggest that (European) humans have "gone too far" in mastering and subduing nature. Graeber and Wengrow (2021, 128) seem to echo Sophocles's "*deinon*":

> *"We are creatures of excess, and this is what makes us simultaneously the most creative, and most destructive of all species."*

In its wording, this is an anthropocentric, not just a Eurocentric statement.

We are now in a position to see the tragedy of the "thick" Anthropocene: There are sound reasons to overcome this growth-addicted trajectory, but the records from the Neolithic origins onto the great acceleration point to a pattern of expan-

18 This macro-historical scaffold coheres with the DPSIR scheme (drivers, pressure, state, impact, response).

sion as a deeply entrenched behavioural strategy. The concepts of a) strong sustainability (Ott 2014), b) deep ecology (Naess 1989), and c) "de-growth" (Ott 2012) entail clusters of prescriptive and ethical ideas how to transform modern societies into a "good" Anthropocene. Ethics is seen as a necessary, but clearly not sufficient condition for such transformation. In some sense, ethics is pragmatically implied in the "*deinon*" because its dialectical semantics entails the idea that "something can go (terribly) wrong". Humans can fail in ways no animal can (Ricoeur 1971). The chorus points to the potentials for moral corruption, failure, and evil.[19] There is the dark side of "*deinon*" at work in political affairs, as in war, but also in the eclipse of achievements into ever-lasting growth.

If ethics is inescapable, the modern/postmodern divide reoccurs in the sphere of ethics. May modern or postmodern ethics address the situation better? The ethical doctrines of the axial age transcended the boundaries of particular cultures (Jaspers 1955). *Pre-modern* ethics was largely virtue ethics and a moral based on religious doctrines such as Christianity (Anscombe 1981, chap. 4). *Modern* ethical theories became secular, as contractarianism (Hobbes, Locke, Rousseau), deontology (Kant), utilitarianism (Bentham, Mill, Sidgwick), and ethics of mercy (Schopenhauer). If there is a Marxian ethics, it belongs to the camp of teleological ethics. *The* dissenting voice in modern ethics is Nietzsche who returned to an aristocratic virtue ethics. I see Habermasian discourse ethics as a modern universal ethics for a globalised modern world. Discourse ethics and environmental ethics can be reconciled (Hendlin and Ott 2016). In Ott (2023a, part 4), I propose some building blocks for a second axial age as a "meta-modernity", which includes a memory function that can immerse into the deep well of history as "laboratories" for escape routes out of a devastating, or horrible Anthropocene. This synthesis of discourse ethics, deliberative democracy, Rawlsian justice, environmental ethics, strong sustainability and viable degrowth policies operates within the paradigm of modern ethics based on neutral devices (discourse, veil of ignorance) for reasoning, justifying, and equal considerations.

It is not easy to identify a core of postmodern ethics. I see Foucault's "*cura sui*" as a postmodern Nietzschean virtue ethics for individual embodied existence. It remains doubtful, whether Foucault's "*cura sui*" or his opposition to "bio-power" is helpful in addressing excessive growth. The most sophisticated postmodern ethicist is Bauman (1993). Thus, I take him as a representative of postmodern ethics. According to Bauman, the great topics within moral philosophy remain largely the same, but postmodern ethics should overcome the modern ideas to deal with them in terms of duties, rules, commitments, institutions, *etc*. In the postmodern condition, the obligatory dissolves into the optional (*ibid.*, 1993, 238). The "twin banners" of "universality and foundation" (*ibid.*, 1993, 8) should be rejected. The "postmodern vantage point" is the self-constitution of the responsible subject (*ibid.*, 1993, 15). Baumann, however, gives no analysis of responsibilities. At the end of his book, Bauman (1993, 225) deconstructs the narrative of emancipation and moral progress in the spirit of Lyotard (Bauman 1993, 225). According to Bauman, ethics should not be based on reason, discourse, emancipation *etc.*, but on the predicament of specific postmodern ways of life as specific subjectivities. Such archetypes of postmodern lives are "postmodern nomads" and "postmodern pilgrims", vagabonds and vagrants (*ibid.*, 1993, 240). "The vagabond is a pilgrim without a destination, a nomad without an itinerary" (*ibid.*, 1993, 240). A nomadic-vagabond moral must be "episodic" and may change from one site to another site of nomadic spacing (*ibid.*). The tourist is the wealthy and privileged flipside of the vagabond who can afford to cultivate curiosity, amusement, aesthetics,

19 The concept of sin in the Hebrew Bible points to the same human predicament as Sophocles' chorus. According to Genesis 4, the first human who ever died was killed by his brother.

cuisine, *etc*. Because they can move away, tourists and vagabonds can escape societal commitments and common tasks. According to Bauman (1993, 242):

> *"In the postmodern world, the vagabond and the tourist are no more marginal people* [...]. *They turn into moulds destined to engross and shape the totality of life."*

A postmodern ethics of the Anthropocene, then, would be an ethics of migration without many normative ties. At the end of Bauman's book (1993, 299), "conscience" is defined as the "ultimate prompt of moral impulse and root of moral responsibility". Thus, conscience rests on the fluid moral impulses of the vagabond, the migrant, or the tourist. It is beyond the scope of this article to compare my ethics (Ott 2023a, part 4) with Bauman's ethics.

I wish to mention three points: 1) To modern ethics, morality and conscience should not be tied closely to particular ways (or types) of life. No stylised way of life should be privileged in moral affairs. In the Anthropocene, perhaps, more localised, non-vagabond ways of life will persist and global tourism, as a branch of global commerce, may transform into new ways of travelling. 2) If common moral decency entails mutual trust, a fluid vagabond/tourist-ethics may suffer from a lack of trustworthiness. 3) Vagabonds and tourists, *as such*, are visitors, but not members of moral and political collectives (as states). As such, they stay apart and will not fully participate in ethical life ("*Sittlichkeit*" *sensu* Hegel, see Ott 2023b). Thus, in the social roles of tourist and vagabond, they will not engage in transformations toward a sustainable post-growth society. Ethics of place making and "being settled" might be more appropriate in this respect.

Given these and other questions, I adopt Bauman's question:

> *"It remains to be seen whether the time of postmodernity will go down in history as the twilight, or the renaissance, of morality" (Bauman 1993, 3).*

My approach hopes for a renaissance of ethical life based on sound moral principles, but it opposes value-laden shadows oscillating in moral twilight.

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Discourses on Modernity

This collection provides interdisciplinary discussions of the impact of the heritage of modernity in archaeology and related disciplines from a theoretical and philosophical point of view. The ways the philosophical and scientific heritage of modernity shapes current human scientific thought is a much-discussed topic in archaeology, anthropology, and beyond. From central themes of modernity, such as reductionism, materialism, and physicalism, there is a connection to central archaeological and other concerns with the relationship of nature to culture – the biological, cognitive, and physiological, on the one hand, and the social, political, and epistemological on the other.

As a political and economic form, modernity also has fundamentally shaped modern archaeological and related scientific practices of "fast" and "slow" science. Modernity, however, was and is also in part a reflective, humanist project constantly reassessing itself and its own intellectual foundations, commitments, presuppositions, and biases. In this sense, any critiques of modernity arguably draw from this aspect of the heritage of modernity itself. All these issues pertain to fundamental methodological and conceptual questions about our understanding of the human past, present, and future that are discussed in this collection.

The book is a product of an international workshop held at Kiel University, Germany, on the topic of philosophy of archaeology. It will be of interest to theoretically minded readers in archaeology, anthropology, philosophy, social theory, and beyond.

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